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**RCRA GROUNDWATER ASSESSMENT
MONITORING PROGRAM APRIL 2018
WHYCO FINISHING TECHNOLOGIES, LLC
670 Waterbury Road
Thomaston, Connecticut**

May 2018

File No. 05.0044541.10



PREPARED FOR:

Whyco Finishing Technologies, LLC
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May 18, 2018
File No. 05.0044541.10

State of Connecticut Department of Energy and Environmental Protection
Bureau of Water Protection and Land Reuse
79 Elm Street
Hartford, CT 06106-5127

Attention: Ms. Sandra Brunelli

Re: RCRA Groundwater Assessment Monitoring Program, April 2018
Whyco Finishing Technologies, LLC
Thomaston, Connecticut
EPA ID CTD001450154

Dear Ms. Brunelli:

This report presents the results of the first semi-annual groundwater sampling event of 2018 conducted on April 25 and 26, 2018 at the Whyco Finishing Technologies, LLC facility in Thomaston, Connecticut (Site). These results represent the first event of the thirtieth year of post-closure monitoring and the first event of the thirty-fourth year of assessment monitoring at the Site under the RCRA program. This report is subject to the Limitations included in Appendix A.

This submittal provides the laboratory analytical results of the Site groundwater monitoring completed in April 2018 and our assessment of the results. A Site Locus Plan is provided as Figure 1 and a Site Plan showing sampling locations is provided as Figure 2. Groundwater elevation contour plans are provided on Figure 3A (overburden) and 3B (bedrock). Well completion details for the RCRA groundwater monitoring network are summarized on Table 1; a summary of the post-closure well sampling program is provided on Table 2; groundwater elevation data are summarized on Table 3; vertical groundwater gradients are provided on Table 4; and field screening readings and the results of laboratory analyses are summarized on Table 5.



The next semi-annual sampling event is scheduled for October 2018.

Please do not hesitate to contact us at (860) 286-8900 if you have any questions or comments regarding this report.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

A handwritten signature in blue ink, appearing to read "Benjamin D. Rach".

Benjamin D. Rach
Assistant Project Manager

A handwritten signature in blue ink, appearing to read "Christopher J. Frey".

Christopher J. Frey, LEP
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Gordon T. Brookman, LEP
Principal

A handwritten signature in blue ink, appearing to read "Adam T. Henry".

Adam T. Henry, LEP
Consultant/Reviewer

cc: Barbara Lewis, Whyco Finishing Technologies, LLC

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1.00 BACKGROUND

The Whyco Finishing Technologies, LLC (Whyco) facility (Site) is located on Waterbury Road in the southern portion of Thomaston, Connecticut. The Naugatuck River forms the western and southwestern boundaries of the property. The Thomaston Sewage Treatment Plant is located on the western bank of the Naugatuck River, opposite the Whyco facility. A New York/New Haven/Hartford railroad and right-of-way traverses the Whyco facility in the area between the eastern side of the building and Waterbury Road. A stone quarry and then the Mattatuck State Forest beyond are located on the east side of Waterbury Road. The Site coordinates are 41 degrees, 38 minutes, 34 seconds north latitude and 73 degrees, 4 minutes, 43 seconds west longitude. A Site locus map is provided as Figure 1. A Site plan showing the facility boundaries and pertinent physical features is provided in Figure 2. The Site is registered as a USEPA Transfer Storage and Disposal Facility under Site identification number CTD001450154.

Whyco's primary business is custom metal finishing (electroplating and surface coating) performed on parts supplied by a variety of customers. Operations at the Site have undergone significant reductions in past years. On-site operations have included electroplating, surface coating, bright dipping, lacquering, vapor degreasing with methylene chloride, and corrosive cleaning. Metals used in their plating operations included chromium, copper, nickel, zinc, and tin/cobalt alloy. Surface coating operations performed at the Site have included chromating, phosphating, and painting. Dilute rinsewaters are treated by chrome reduction, cyanide destruction, chemical precipitation and pH adjustment. Treatment processes generate metal hydroxide sludge that is a listed hazardous waste (F006).

A number of major revisions to Whyco's waste management practices took place subsequent to the passage of the 1967 Connecticut Clean Water Act and the Federal Clean Water Act of 1972. A primary modification was the institution of a wastewater pretreatment system for the three main waste streams generated by Whyco's production process (i.e., acid/alkali wastewater containing various metals, cyanide-bearing wastewater containing metals, and chromium-containing wastewater). The cyanide and chromium wastewater streams are individually pre-treated by the wastewater treatment system to destroy cyanide and reduce chromium, respectively. The two streams are then combined for the removal of metals and neutralization.

Prior to 1985, the treated, combined waste stream was directed to a clarifier tank for settling. The wastewater was then directed to the effluent recharge lagoons at the southern end of the property where the wastewater percolated through the soil to the groundwater and eventually discharged to the Naugatuck River. The locations of the former lagoon areas are shown on Figure 2.

The sludge from the clarifier tank was placed into the two hypalon-lined lagoons (Solid Waste Management Unit [SWMU] No. 2) on the eastern side of the property. This sludge was moved to the Sludge Drying Lagoon (SWMU No. 3) for further drying until finally placed in the landfill (SWMU No. 1). See Figure 2.

Due to the presence of the thickening lagoon, drying lagoon, and sludge landfill, Whyco submitted a RCRA Part A Permit Application to the U.S. Environmental Protection Agency (EPA) on November 17, 1980. At that time, Whyco was issued EPA identification number CTD001450154. Specifically, this application addressed the facility's operation of these three-metal hydroxide sludge (F006 listed waste) management areas, although they were not discussed accurately. One management area was identified as a surface impoundment with the maximum storage capacity of 161,000 gallons. A second was identified as an 80,000 gallon per day treatment surface impoundment, the drying lagoon. The third was identified as an 80,000 gallon per day treatment tank, the lined thickening beds. The



Connecticut Department of Energy and Environmental Protection (CTDEEP)¹ and the EPA approved closure of the lagoons and waste pile, and closure was implemented and certified as having been completed in accordance with CTDEEP/EPA-approved closure plans on February 7, 1990.

The Whyco facility presently occupies approximately seven acres and includes an approximately 100,000-square foot production building located in the northern portion of the Site. The production building (SWMU No. 4) includes several SWMUs, many of which have been closed. Closed units include waste cyanide (SWMU No. 10) and acid/alkali drum storage areas (SWMU No. 11) and a waste methylene chloride tank (SWMU No. 14), which was located outside the main building in an enclosed area. Four interior waste treatment tanks are currently in-use as liquid bulk storage areas for waste cyanide- and arsenic-contaminated liquids (SWMU Nos. 15, 16, 17, and 18, respectively). Outside the main building was a shed designated as an ignitable drum storage area (SWMU No. 12).

As indicated above, the southern portion of the Site is occupied by a series of inactive lagoons (SWMU Nos. 2 and 3), now closed and capped but historically operated in conjunction with the on-site wastewater treatment system. Also located there is a hazardous waste landfill (SWMU No. 1), closed in 1985 and containing wastewater treatment sludge from electroplating operations.

Formerly, treated rinse waters were discharged to the Naugatuck River under NPDES Permit No. CT0001457 issued by the State of Connecticut Water Management Bureau. Whyco made significant modification to their operations and achieved their goal of zero discharges of treated wastewaters to the river through modification of their operations in Fall 2008, at which time the discharge permit was terminated.

1.10 RCRA MONITORING NETWORK

In 1985, Whyco installed six overburden monitoring wells, designated MW-2, MW-3, WC-1A, WC-2, WC-3, and WC-4, to meet EPA interim status detection monitoring requirements (40 CFR 265). These wells were installed downgradient of the RCRA units. Well construction data for groundwater monitoring wells installed at the Site are summarized in Table 1. Through time the monitoring network has been modified many times to adjust to the conditions observed. Key modifications included:

- 1985 expansion for a groundwater Quality Assessment (QA) Program
- 1988 expansion of bedrock monitoring points to further QA Program
- 1994 expansion to further QA Program
- 1998 expansion to voluntarily monitor a process release and address Transfer Act requirements
- 2003 expansion to address Transfer Act requirements
- 2012 reduction of wells sampled and sampling twice per year

The current groundwater monitoring program for both RCRA and the Property Transfer Act is shown on Table 2.

¹ The Department of Environmental Protection was merged with the Department of Public Utility Control to become the Department of Energy and Environmental Protection (CTDEEP) on July 1, 2011.



1.20 RCRA GROUNDWATER MONITORING PROGRAM

Groundwater elevation data is measured at thirty-three wells at the Site each semi-annual event to provide data used to assess the direction and velocity of groundwater movement. Wells gauged at the Site and groundwater elevation data recorded during this event are listed on Table 3. Depth to groundwater measured at the wells and observations of the well conditions are summarized on a water level measurement log presented in Appendix B.

The parameters monitored in April each year under the RCRA groundwater assessment monitoring program include cadmium, total chromium, copper, cobalt, nickel, pH, and specific conductance (See Table 2). Parameters monitored annually in October include the preceding and halogenated VOCs (see Table 2). Hexavalent chromium is also sampled on a voluntary basis under the Property Transfer Act (PTA) program during both the April and October events.

2.00 FIELD OBSERVATIONS AND SAMPLING

GZA personnel measured depth to water at Site wells on April 25, 2018. On April 25 and 26, 2018, GZA personnel collected groundwater samples from designated RCRA post-closure and Property Transfer Act monitoring wells and relinquished those samples to ESS Laboratory, Cranston, RI for analysis of the approved monitoring program constituents as described above and summarized on Table 2. Samples collected for hexavalent chromium analysis were relinquished to Phoenix Environmental Laboratory of Manchester, Connecticut due to the short holding time (24 hours) of those samples.

The groundwater samples were collected using EPA low stress/low flow groundwater sampling protocols and following GZA Standard Operating Procedures (SOPs). The groundwater samples were analyzed by methods described in "Test Methods for Evaluating Solid Waste", EPA SW-846 and using Connecticut Reasonable Confidence Protocol (RCP) Quality Assurance/Quality Control testing methodologies. Quality control samples submitted this sampling round included one matrix spike, one matrix spike duplicate (MS/MSD) and one trip blank. Results of these quality control samples were assessed and evaluated for conformance with RCP test protocols and usability in accordance with Connecticut RCP Data Usability Evaluation guidance.

Groundwater quality parameters monitored during sampling of the above wells were recorded on groundwater sampling field data sheets, copies of which are presented in Appendix B. Laboratory analytical reports, including RCP test results, are presented within Appendix C.

3.00 GROUNDWATER FLOW

Groundwater piezometric contour maps for the April 2018 sampling event were prepared for the overburden (Figure 3A) and bedrock (Figure 3B) aquifers at the Site using the water level observation data collected at Site wells on April 25, 2018 (Table 3). The contour maps indicate that groundwater flow in the overburden aquifer was generally to the west and southwest in the northern portion of the Site and shifting generally to the south and southwest in the southern portion of the Site. Consistent with previous events, a small groundwater mound is indicated near wells MW-8 and MW-9. Groundwater flow in the bedrock aquifer in the southern portion of the Site (where bedrock wells are available) is shown to be generally west toward the southward-flowing Naugatuck River, immediately west of the facility property.



Based on a comparison of the water level elevation data on Table 3 and water table contours on Figures 3A and 3B, the directions of groundwater flow in the overburden and bedrock aquifers during April 2018 are consistent with flow directions observed previously in both of these hydraulic units. As shown on Table 4, inferred vertical gradients between the shallow and deep portions of the overburden aquifer were all upwards this event with one exception. The inferred vertical gradient between the shallow and deep overburden aquifer in well pair MW-3/MW-3D is slightly downward. The inferred vertical gradients between the deep overburden and bedrock aquifers were also all upward this event. These patterns are generally consistent with previous sampling events.

The maximum upward gradient in the shallow/deep overburden well pairs this event was reported at 0.0181 feet per foot at well pair WC-4/WC-4D south of the regulated landfill.

The inferred lateral gradient in the overburden aquifer in the area of the closed landfill unit (aligned approximately in the direction of groundwater flow) is approximately 0.0045 feet/foot. The inferred lateral hydraulic gradient in the bedrock aquifer in the area of the closed landfill unit (aligned approximately in the direction of groundwater flow) is approximately 0.0077 feet/foot. Values of hydraulic conductivity (5 to 11 ft./day) and effective porosity (22 percent) for the overburden were determined in the 1986 Groundwater Assessment Program report². Hydraulic conductivity in the bedrock aquifer at wells MW-1BD and MW-7BD determined in 1990³ was reported to be approximately 0.11 ft./day. The porosity of crystalline bedrock aquifers is typically on the order of less than 10 percent. The rates of lateral groundwater flow in the overburden and bedrock aquifers were calculated using the following equation:

$$V = ki/n$$

$$\text{Overburden } V_1 = 5 \text{ feet/day} \times 0.0045 \text{ ft/ft} / 0.22 \quad V_1 = 0.102 \text{ ft/day}$$

$$\text{Overburden } V_2 = 11 \text{ ft/day} \times 0.0045 \text{ ft/ft} / 0.22 \quad V_2 = 0.225 \text{ ft/day}$$

$$\text{Bedrock } V = 0.11 \text{ ft/day} \times 0.0077 \text{ ft/ft} / 0.10 \quad V = 0.008 \text{ ft/day}$$

Where:

V = Groundwater flow rate;

k = Hydraulic conductivity (as discussed above)

i = Hydraulic gradient (ranging in magnitude as described above); and,

n = Effective Porosity (as described above)

Based on the values listed above, the rate of lateral groundwater flow in the landfill area was estimated to range between ~0.102 feet/day and ~0.225 feet/day in the overburden and ~0.008 feet/day in the bedrock aquifer.

² Report entitled: "Whyco Chromium Groundwater Assessment Program," by Fuss & O'Neill, Inc., September 1986.

³ Report entitled: "Bedrock Aquifer Investigation, Whyco Chromium Company, Thomaston, Connecticut," by Fuss & O'Neill, Inc., July 1990.



Empirical data related to the concentration of hexavalent chromium in well cluster WC-1A after the circa 2005 closure of an in-ground plating wastewater sump suggested that velocity in the overburden may be up to one order of magnitude greater than these equations predict, most likely as a result of different (higher) hydraulic conductivity values.

4.00 ANALYTICAL RESULTS

Table 5 summarizes the results of groundwater sample analyses for parameters tested this quarter. Site standards for groundwater are included on this table for reference⁴ as required under RCRA 22a-449(c) – 105 (c)(3)⁵.

Groundwater analytes that were detected in concentrations exceeding the Reference and RSR Standards are highlighted on Table 5 and are discussed below.

4.10 QA/QC RESULTS

Reasonable Confidence Protocol Analyses Evaluation

The laboratory analytical reports contained in Appendix C include “Reasonable Confidence Protocols” (RCP) certification forms, narratives and RCP test results completed as a measure of the quality of the laboratory analytical results produced. GZA evaluated the RCP QA/QC certification forms and project narratives and the laboratory’s assessment of RCP QC tests completed this event. All RCP performance criteria by the laboratory were reported within acceptable limits. Therefore, GZA believes this data set is suitable for its intended use.

4.20 REPORTING LIMITS

Laboratory reporting limits are summarized on Table 5. All reporting limits were below reference and RSR criteria for groundwater.

4.30 INORGANIC COMPOUNDS

Laboratory analytical results for parameters tested this event are summarized on Table 5. Reference Standards and/or Remediation Standard Regulation (RSR) criteria for pH, cadmium, total chromium, hexavalent chromium, nickel, and copper were exceeded in samples from at least one monitoring location, highlighted on Table 5 and are summarized below:

- pH was reported outside the EPA MCL standard range of 6.5 to 8.5 standard pH units (s.u.) and the CT DOHS standard range of 6.4 to 8.5 s.u. in 11 of the 15 wells sampled. As presented on Table 5, stabilized field measurements of pH from wells sampled ranged from 4.81 s.u. (MW-10D) to 8.75 s.u. (MW-4BD).

⁴ Although groundwater at the Site area is not used as a drinking water supply, the U.S. EPA Interim Drinking Water Standards, Maximum Contaminant Levels (MCLs), Secondary Maximum Contaminant Levels (SMCLs), and Connecticut Department of Health Services (DOHS) MCLs are cited as site Reference Standards for groundwater monitoring under the approved Groundwater Assessment Monitoring Program.

⁵ In accordance with Connecticut Hazardous Waste Regulations, groundwater constituent concentrations were compared to applicable numeric criteria established under the above EPA and DOHS standards and Connecticut Remediation Standard Regulations (i.e. Groundwater Protection Criteria, Surface Water Protection Criteria and Industrial/Commercial Groundwater Volatilization Criteria). Evaluation of the Site’s overall compliance with the RSRs is beyond the scope of this study.



- Cadmium concentrations ranged from less than 0.0025 milligrams per liter (mg/L) in 11 of the 15 wells tested to 0.0155 mg/L (WC-1A). Concentrations of cadmium in groundwater samples from wells WC-1A (0.0155 mg/L), WC-2 (0.01125 mg/L), and MW-10M (0.0065 mg/L) exceeded the EPA Maximum Contaminant Limit (MCL) and RSR GWPC standard of 0.005 mg/L as well as the Surface Water Protection Criteria (SWPC) of 0.006 mg/L. Overburden samples WC-1A and WC-2 also exceeded the EPA Interim Drinking Water Standard (IDWS) of 0.01 mg/L.
- Total chromium concentrations in groundwater ranged from less than 0.010 mg/L in 4 of the 15 wells tested to 1.46 mg/L in well sample WC-1A. Total chromium concentrations exceeded the IDWS Standard of 0.05 mg/L in samples from wells MW-2 (0.107 mg/L), MW-3 (0.0975 mg/L), WC-1A (1.46 mg/L), WC-2 (0.577 mg/L), MW-10M (0.392 mg/L), and MW-11M (0.0562 mg/L). Chromium was also reported above the Connecticut Department of Health Services (DOHS) Water Quality Standard, the Groundwater Protection Criteria and the EPA MCL of 0.1 mg/L in wells MW-2, WC-1A, WC-2 and MW-10M.
- Concentrations of hexavalent chromium ranged from less than 0.01 mg/L in 5 of the 15 wells tested to 1.37 mg/L in overburden well sample WC-1A. Groundwater concentrations exceeded the SWPC of 0.11 mg/L in the samples from overburden wells MW-10M (0.35 mg/L), WC-1A (1.37 mg/L) and WC-2 (0.55 mg/L).
- Concentrations of trivalent chromium were calculated to be below reportable limits in 4 of 15 wells and less than the SWPC of 1.20 mg/L in the sampled wells. The highest calculated concentration of trivalent chromium was in well WC-1A at 0.09 mg/L.
- Nickel concentrations ranged from less than 0.025 mg/L in 3 of the 15 wells tested to 0.421 mg/L in well sample MW-2. Groundwater concentrations exceeded the EPA MCL, Connecticut DOHS Water Quality Standard and GWPC standard of 0.1 mg/L in samples from wells MW-2 (0.421 mg/L), WC-1A (0.369 mg/L), WC-2 (0.394 mg/L), WC-3 (0.226 mg/L), WC-4 (0.195), MW-8D (0.101 mg/L) and MW-10M (0.127 mg/L). Nickel was not reported above the SWPC of 0.88 mg/L during this sampling event.
- Copper concentrations ranged from less than 0.010 mg/L in 9 of the 15 wells to 0.147 mg/L in well sample WC-1A. The groundwater concentration exceeded the SWPC of 0.048 mg/L in the samples from wells WC-1A (0.147 mg/L) and WC-2 (0.0579 mg/L). Copper concentrations did not exceed any other applicable state or federal standards.
- Cobalt concentrations ranged from less than 0.010 mg/L in 13 of the 15 wells tested to 0.0153 mg/L in sample WC-1A. Presently there is not an established Reference Standard, EPA MCL, CTDOH, RSR GA-PMC or SWPC for cobalt.

5.00 DISCUSSION

5.10 STATISTICAL ANALYSES

As the facility is conducting this monitoring as part of an ongoing groundwater quality assessment program, no statistical analyses of the data were performed.



5.20 TRENDS AND HISTORICAL COMPARISONS

A chromium bearing wastewater sump with compromised integrity was identified and taken out-of-service by Whyco between February and May 2005. The sump was believed to be the source of the elevated hexavalent chromium and select other metals detected in RCRA wells WC-1A and WC-2 and supplemental well sets MW-10 and MW-11 beginning in or around 2000. Based on the inferred groundwater flow pattern, these overburden wells are located along the groundwater flow path from the sump.

Whyco evaluated and decommissioned all below grade wastewater sumps within the Site building. Only the initial sump was identified as a source of groundwater releases and its use was discontinued in 2005. Data indicate rapid improvement in groundwater quality in wells WC-1A and MW-10M beginning in or around 2007, earlier than was expected, suggesting hydraulic conductivities and/or porosities different than those estimated in the 1980s. Wells WC-1A, WC-2 and MW-10M, in the middle of the flow path, remain the most impacted wells. It appears the removal of this sub-slab process sump has addressed the major impacts from this release pathway although these wells, located most directly downgradient of either or both historical interior process areas and the landfill remain the most impacted. GZA will further assess these trends in the 2018 annual report.

5.30 ADEQUACY OF THE MONITORING PROGRAM

The existing monitoring network appears to be sufficient to observe the trends of the identified metals plume and to monitor potential impacts from the RCRA regulated waste management units. The next sampling event is scheduled for October 2018.



TABLES

TABLE 1
SUMMARY OF MONITORING WELL COMPLETION DETAILS
WHYCO CHROMIUM COMPANY, INC.
THOMASTON, CONNECTICUT

Monitoring Well	ELEVATIONS (Feet MSL)									Completion Date
	Ground Surface	Top of Steel	Top of PVC	Borehole Depth (feet)(1)	Aquifer Type (2)	Screened Length (feet)(3)	Screened Elevations (feet MSL)	Nominal Well Diam. (inches)	Screen Slot Size (inches)	
MW-1BD	325.6	326.62	---	135	BR	61 OP	251-190	6	NA	3/16/88
MW-1D	330.5	333.06	332.49	24 (R)	OB	20	326-306	2	0.010	1/31/86
MW-2	327.5	329.16	328.69	22	OB	10	318-308	2	0.010	1/26/83
MW-3	327.3	329.69	329.77	18	OB	10	320-310	2	0.010	1/26/83
MW-3BD	327.5	330.03	---	125	BR	60 OP	262-202	6	NA	3/25/88
MW-3D	327.4	329.62	329.53	57 (R)	OB	30	300-270	2	0.010	2/12/86
MW-4BD	325.4	328.53	---	142	BR	88 OP	271-183	6	NA	3/17/88
MW-5S	326.6	327.90	327.70	29	OB	10	307-297	2	0.010	11/28/94
MW-5D	326.7	329.06	328.79	57	OB	10	282-272	2	0.010	11/23/94
MW-6	323.0	325.36	324.58	42	OB	20	305-285	2	0.010	1/31/86
MW-7BD	334.0	337.30	---	125	BR	53 OP	259-206	6	NA	3/23/88
MW-8	328.2	328.19	327.81	22	OB	10	317-307	2	0.010	1/30/86
MW-8D	328.15		327.94	100	OB	10		2	0.010	4/15/2003
MW-9	328.6	328.52	328.07	22	OB	10	317-307	2	0.010	1/30/86
MW-9D				60	OB	5		2	0.010	4/22/2003
WC-1A (4)	325.5	327.32	327.39	35 (R)	OB	10	300-290	2	0.010	5/9/85
WC-1D	325.2	327.43	326.83	52	BR	10	283-273	2	0.010	2/4/86
WC-2	325.4	327.58	327.25	20	OB	15	320-305	2	0.010	5/8/85
WC-3	324.7	326.36	326.05	22	OB	15	321-306	2	0.010	5/9/85
WC-4	325.1	327.34	327.34	22	OB	15	320-305	2	0.010	5/10/85
WC-4D	325.4	327.28	325.87	35 (R)	OB	20	312-292	2	0.010	2/3/86
MW-10	327.68	--	327.25	15	OB	10	322-312	2	0.010	2/25/1998
MW-10M	327.5	--	327.25	29	OB	5	304-299	2	0.010	4/22/2003
MW-10D	327.49	--	327.23	50	OB	10	288-277	2	0.010	4/14/2003
MW-11	327.88	--	327.73	15	OB	10	322-312	2	0.010	2/26/1999
MW-11M	327.69	--	327.44	39	OB	5	294-289	2	0.010	4/22/2003
MW-11D	327.66	--	327.22	70	OB	10	268-258	2	0.010	4/21/2003
MW-12	329.68	--	329.44	15	OB	10	324-314	2	0.010	2/25/1998
MW-13	329.54	--	329.33	15	OB	10	324-314	2	0.010	2/26/1999
MW-14	329.49	--	329.2	15	OB	10	324-314	2	0.010	2/25/1998
MW-15	NA	--	327.97	16	OB	10	322-312	2	0.010	4/11/2003
MW-15M	NA	--	327.76	30	OB	5	303-298	2	0.010	4/11/2003
MW-15D	NA	--	327.90	50	OB	10	288-278	2	0.010	4/10/2003

- Notes:
1. (R) indicates borehole terminated at refusal.
 2. Aquifer types: OB = overburden; BR = bedrock
 3. OP indicates bedrock wells without screen (open borehole)
 4. WC-1 not completed, refusal at 6.3', May 1985, moved 2 ft North to WC-1A

TABLE 2
GROUNDWATER SAMPLING MATRIX
2018 GROUNDWATER MONITORING EVENTS
WHYCO FINISHING TECHNOLOGIES, LLC
THOMASTON, CONNECTICUT

Analyte	MW-1BD	MW-2	MW-3	MW-3BD	MW-4BD	MW-8*	MW-8D*	WC-1A	WC-2	WC-3	WC-4	MW-10M*	MW-10D*	MW-11M*	MW-11D*	EB-1	TRIP BLANK	Matrix Spike	Matrix Spike Dup	Total No. Samples
Field Observation & Screening																				
pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					15
Specific Conductance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					15
Inorganics																				
Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O		X	X	18
Chromium, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O		X	X	18
Chromium, hexavalent	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O		X	X	18
Nickel	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O		X	X	18
Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O		X	X	18
Copper	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O		X	X	18
Volatile Organic Compounds																				
Chlorinated VOCs	O	O	O	O	O			O	O	O	O					O	O	O	O	13

Note
* = Wells sampled as part of Connecticut Property Transfer Act investigations.
X = Parameter sampled during April and October event.
O = Parameter sampled during October event only.
Depth to groundwater measurements will be taken at all Site wells to allow construction of Site-wide groundwater coutour plans for the facility.

TABLE 3
SUMMARY OF WATER LEVEL OBSERVATION DATA FOR APRIL 25, 2018
WHYCO FINISHING TECHNOLOGIES,LLC
THOMASTON, CONNECTICUT

MONITORING LOCATION	REFERENCE ELEVATIONS (feet MSL)		DEPTH TO WATER (feet)	WATER LEVEL ELEVATION (feet MSL)
	Top of Steel	Top of PVC	4/25/2018	4/25/2018
Overburden				
MW-1D	333.06	332.49	7.97 (PVC)	324.52
MW-2	329.16	328.69	9.18 (PVC)	319.51
MW-3	329.69	329.77	10.94 (PVC)	318.83
MW-3D	329.62	329.53	10.71 (PVC)	318.82
MW-5S	327.90	327.70	9.20 (PVC)	318.50
MW-5D	329.06	328.79	10.23 (PVC)	318.56
MW-6	325.36	324.58	5.73 (PVC)	318.85
MW-8	328.19	327.80	7.15 (PVC)	320.65
MW-8D	NA	327.94	8.88 (PVC)	319.06
MW-9	328.52	328.03	8.06 (PVC)	319.97
MW-9D	NA	NA	8.94 (PVC)	Undetermined
MW-10S	NA	327.25	7.89 (PVC)	319.36
MW-10M	NA	327.25	7.92 (PVC)	319.33
MW-10D	NA	327.23	7.96 (PVC)	319.27
MW-11S	NA	327.46	7.55 (PVC)	319.91
MW-11M	NA	327.44	7.96 (PVC)	319.48
MW-11D	NA	327.22	8.12 (PVC)	319.10
MW-12	NA	329.24	NM (PVC)	Undetermined
MW-13	NA	329.13	8.16 (PVC)	320.97
MW-14	NA	329.20	6.98 (PVC)	322.22
MW-15S	NA	327.97	8.23 (PVC)	319.74
MW-15M	NA	327.76	8.10 (PVC)	319.66
MW-15D	NA	327.90	8.24 (PVC)	319.66
WC-1A	327.32	327.39	9.05 (PVC)	318.34
WC-2	327.58	327.25	8.94 (PVC)	318.31
WC-3	326.36	326.05	9.14 (PVC)	316.91
WC-4	327.34	327.31	9.90 (PVC)	317.41
WC-4D	327.28	325.87	8.27 (PVC)	317.60
Bedrock				
MW-1BD	326.62	NA	7.72 (Steel)	318.90
MW-3BD	330.03	NA	11.17 (Steel)	318.86
MW-4BD	328.53	NA	9.67 (Steel)	318.86
MW-7BD	337.30	NA	17.02 (Steel)	320.28
WC-1D	327.43	326.83	8.47 (PVC)	318.36

Legend:

NA indicates data Not Available
 NM indicates data Not Measured

Notes:

1. All data are expressed in units of feet.
2. The survey elevations shown are expressed in units of feet above Mean Sea Level (MSL).
3. Water level observations were made by GZA on April 25, 2018.
4. PVC = Water-level measurements in well were made relative to top of PVC well riser.
5. Steel = Water-level measurements in well were made relative to top of steel well casing.

TABLE 4
VERTICAL GROUNDWATER POTENTIALS
APRIL 2018 MONITORING RESULTS
WHYCO FINISHING TECHNOLOGIES, LLC
THOMASTON, CONNECTICUT

MONITORING LOCATION	AQUIFER TYPE	SCREENED INTERVAL (ft)	GROUNDWATER ELEVATION	HYDRAULIC POTENTIAL (ft)	VERTICAL GRADIENT (ft/ft)	COMPARED WELLS
MW-3	Overburden	10 - 20	318.83	-0.01	-0.0004	MW-3D - MW-3
MW-3D	Overburden	27 - 57	318.82	0.04	0.0008	MW-3BD - MW-3D
MW-3BD	Bedrock	65 - 125	318.86			
WC-2	Overburden	5 - 20	318.31	0.03	0.0019	WC-1A - WC-2
WC-1A	Overburden	23 - 33	318.34	0.02	0.0011	WC-1D - WC-1A
WC-1D	Bedrock	42 - 52	318.36	0.54	0.0094	MW-1BD - WC-1D
MW-1BD	Bedrock	74 - 135	318.90			
WC-4	Overburden	5 - 20	317.41	0.19	0.0181	WC-4D - WC-4
WC-4D	Overburden	13 - 33	317.60	1.26	0.0168	MW-4BD - WC-4D
MW-4BD	Bedrock	54 - 142	318.86			
MW-5S	Overburden	19 - 29	318.50	0.06	0.0023	MW-5D - MW-5S
MW-5D	Overburden	45 - 55	318.56			

Legend:

NA indicates data Not Available
 NM indicates data Not Measured

Notes:

1. All data are expressed in units of feet.
2. The survey elevations shown are expressed in units of feet above Mean Sea Level (MSL).
3. Water level observations were made by GZA on April 25, 2018.
4. A negative hydraulic potential or vertical gradient indicates a downward gradient.

TABLE 5
SUMMARY OF GROUNDWATER SAMPLE RESULTS
APRIL 2018 SAMPLING EVENT

WHYCO FINISHING TECHNOLOGIES, LLC
THOMASTON, CONNECTICUT

ANALYTE	METHOD	UNITS									MW-1BD	MW-2	MW-3	MW-3BD	MW-4BD	MW-8**	MW-8D**	MW-10M**	MW-10D**	MW-11M**	MW-11D**	WC-1A	WC-2	WC-3	WC-4
Field Observations & Screening			A	B	C	D	E	F	G	H															
pH	FIELD	standard units	NE	NE	6.5 to 8.5	6.4 to 8.5	NE	NE	NA	NA	8.39	6.61	6.42	8.21	8.75	6.43	5.98	5.33	4.81	5.97	6.27	5.34	5.22	6.11	6.61
Specific Conductance	FIELD	µS	NE	NE	NE	NE	NE	NE	NA	NA	441	296	264	752	123	242	242	188	291	250	284	220	192	180	225
Metals																									
Cadmium	EPA 3005 A/6010B	mg/L	0.010	0.005	NE	NE	0.005	0.006	NA	NA	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0065	0.0031	<0.0025	<0.0025	0.0155	0.01125	<0.0025	<0.0025
Chromium	EPA 3005A/6010B	mg/L	0.05	0.10	NE	0.10	0.10	NE	NA	NA	<0.01	0.107	0.0975	<0.01	<0.01	0.028	0.048	0.392	0.0359	0.0562	<0.01	1.46	0.577	0.0449	0.0404
Chromium, hexavalent	EPA 7196	mg/L	NE	NE	NE	NE	NE	0.11	NA	NA	<0.01	0.09	0.09	<0.01	<0.01	0.02	0.04	0.35	<0.01	0.05	<0.01	1.37	0.55	0.04	0.04
Chromium, Trivalent	Calculated ³	mg/L	NE	NE	NE	NE	NE	1.20	NA	NA	<0.01	0.0170	0.0075	<0.01	<0.01	0.008	0.0080	0.042	0.0359	0.0062	<0.01	0.09	0.027	0.0049	0.0004
Nickel	EPA 3005 A/6010B	mg/L	NE	0.10	NE	0.10	0.10	0.880	NA	NA	<0.025	0.421	0.0358	0.0809	<0.025	0.0566	0.101	0.0765	0.127	0.0981	<0.025	0.369	0.394	0.226	0.195
Copper	EPA 3005 A/6010B	mg/L	NE	1	1	1	1.3	0.048	NA	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0123	<0.01	0.0119	<0.01	<0.01	0.147	0.0579	0.0259	0.0259
Cobalt	EPA 3005 A/6010B	mg/L	NE	NE	NE	NE	NE	NE	NA	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0153	0.0143	<0.01	<0.01

Legend

A. EPA (40 CFR 265) Appendix III Interim Drinking Water Standards.

B. EPA National Primary Drinking Water Standards (Maximum Contaminant Level) and Maximum Contaminant Level Goals (italics).

C. EPA Secondary Drinking Water Standards.

D. Connecticut Department of Health Water Quality Standards or action levels.

E. Connecticut Groundwater Protection Criteria.

F. Connecticut Surface Water Protection Criteria

G. Connecticut Residential Groundwater Volatilization Criteria

H. Connecticut Industrial/Commercial Groundwater Volatilization Criteria

NE indicates standard Not Established.

NT indicates Not Tested.

NS indicates sample was not collected or analyzed due to active extraction pump in well.

<1 indicates a non-detection and the reporting limit.

Shaded cell in bold indicates an exceedance of one or more of the above standards.

µS = micro Siemens, mg/L = milligrams per liter

TB = Trip blank sample.

** Wells sampled under Property Transfer Act investigations.

Notes:

1. Samples were collected by GZA GeoEnvironmental, Inc on April 25 and 26, 2018.

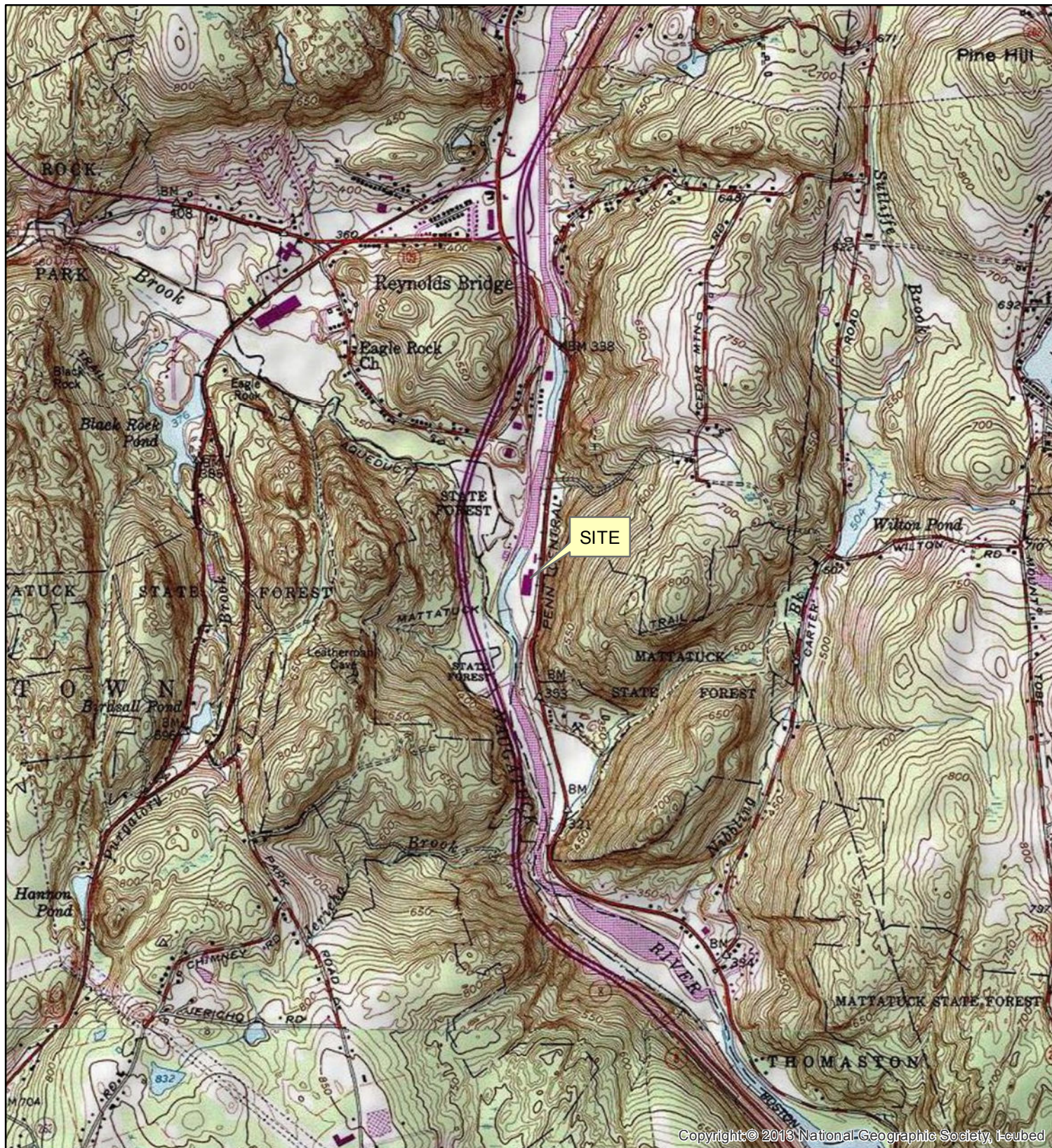
2. Laboratory analyses were performed by ESS Laboratory and Phoenix Environmental Laboratories.

A complete list of laboratory data sheets is included in Appendix C of this report.

3. Trivalent Chromium is calculated by subtracting hexavalent chromium from total chromium concentrations.



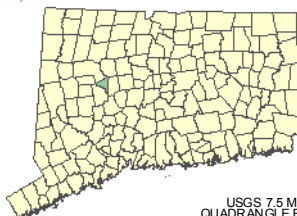
FIGURES



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GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com



USGS 7.5 MINUTE
QUADRANGLE BASE MAP:
THOMASTON, CONNECTICUT
1997

SITE LOCUS

WHYCO FINISHING TECHNOLOGIES, LLC
THOMASTON, CONNECTICUT

Source: TOPO! maps are USGS topographic maps, Copyright: © 2011 National Geographic Society, i-cubed and are provided by arcgisonline.com.

PROJ MGR: CJF

REVIEWED BY: TFS

PROJECT NO. 05.0044541.05

DESIGNED BY: CJF

DRAWN BY: MJS

DATE: 11-11-14

THIS MAP HAS BEEN COMPILED FROM OTHER MAPS AND/OR SOURCES OF INFORMATION.
THIS MAP SHOULD NOT BE CONSTRUED AS A PROPERTY SURVEY, NOR USED FOR CONSTRUCTION PURPOSES.

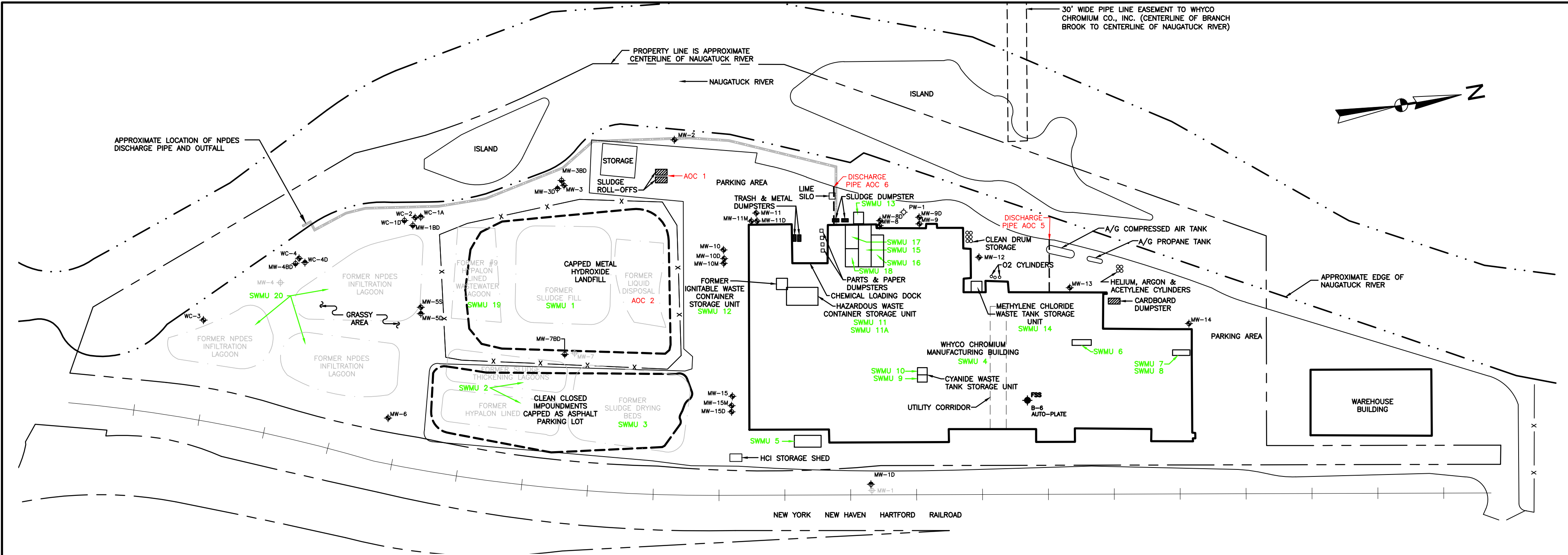
0 1,000 2,000 4,000 6,000 8,000

Scale in Feet



FIGURE

1



NOTES:

- 1) BASE MAP DEVELOPED FROM PLAN PROVIDED BY WHYCO CHROMIUM CO., INC. ENTITLED "SITE PLAN, WHYCO CHROMIUM COMPANY" PREPARED BY FUSS & O'NEILL, INC. DATED JULY 1990, ORIGINAL SCALE 1"=50' PROJECT NO.85-152.
- 2) THE LOCATION OF THE MONITORING WELLS, BORINGS, AND PRODUCTION WELLS WERE APPROXIMATELY DETERMINED BY TAPE MEASUREMENTS, LINE OF SIGHT, AND TOPOGRAPHIC FEATURES. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY METHOD USED.

SWMU (#)	NAME
1	WASTE PILE/LANDFILL
2	HYPALON-LINED SLUDGE THICKENING LAGOONS
3	SLUDGE DRYING BED
4	PRODUCTION BUILDING
5	NO. 2 FUEL OIL TANK
6	NO. 6 FUEL OIL TANK
7	FORMER STEEL GASOLINE TANK
8	FORMER FIBERGLASS DIESEL FUEL TANK
9	CYANIDE -CONTAMINATED LIQUID BULK STORAGE TANKS
10	CYANIDE WASTE DRUM STORAGE AREA
11	ACID/ALKALI DRUM STORAGE AREA (>90 DAY)
11A	ACID/ALKALI DRUM STORAGE AREA (<90 DAY)
12	FLAMMABLE WASTE DRUM STORAGE AREA
13	ARSENIC-CONTAMINATED LIQUID BULK STORAGE
14	WASTE METHYLENE CHLORIDE BULK STORAGE AREA
15	ACID/ALKALI WASTEWATER BULK STORAGE TANK

SWMU (#)	NAME
16	ACID/ALKALI WASTEWATER BULK STORAGE TANK
17	CYANIDE WASTEWATER BULK STORAGE TANK
18	CYANIDE WASTEWATER BULK STORAGE TANK
19	NPDES REGULATED DISCHARGE LAGOON
20	NPDES REGULATED DISCHARGE INFILTRATION LAGOONS
AOC (#)	NAME
1	ROLLOFF PAD AND CONTAINERS
2	FORMER LIQUID DISPOSAL LAGOON
3	FORMER SOLID WASTE BURNING AREA
4	FORMER PRODUCTION WELL USED FOR INJECTION
5	WASTE PIPE TO NAUGATUCK RIVER
6	WASTE PIPE TO NAUGATUCK RIVER
7	SLUDGE TRENCH

LEGEND:

- MW-1 MONITORING WELL LOCATION AND IDENTIFICATION
- MW-1BD BEDROCK MONITORING WELL LOCATION AND IDENTIFICATION
- WC-2 SHALLOW OVERBURDEN MONITORING WELL LOCATION AND IDENTIFICATION
- WC-1A DEEP OVERBURDEN MONITORING WELL LOCATION AND IDENTIFICATION
- PW-1 PRODUCTION WELL LOCATION AND IDENTIFICATION
- MW-1 DESTROYED MONITORING WELL

LEGEND CONTINUED:

- SWMU 14 SOLID WASTE MANAGEMENT UNIT
- PROPERTY LINE
- CHAIN LINK FENCE
- NEW YORK, NEW HAVEN & HARTFORD RAILROAD

WHYCO FINISHING
TECHNOLOGIES, LLC
THOMASTON, CONNECTICUT

SITE PLAN

JOB NO.
44541.05
SHEET NO.
2

Project Mgr: CJF
Designed By: BDR
Reviewed By: TFS

Drawn By: MJS
Date: 11-11-14

GeoEnvironmental, Inc.
655 Winding Brook Drive Suite 402
Glastonbury, Connecticut 06033
Phone (860)286-8900





APPENDIX A LIMITATIONS



USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).
3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.
4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.
6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.



SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.
9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.
10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.



APPENDIX B SAMPLING FIELD DATA SHEETS

WATER LEVEL MEASUREMENT LOG

GZA GeoEnvironmental, Inc. 655 Winding Brook Dr, Suite 402 Glastonbury, CT 06033 Phone: (860) 286-8900			PROJECT Project Name: <u>Whyco Technologies</u> Location: <u>Thomaston, CT</u>					Date: <u>4/25/2018</u> File No. <u>05.0044541.10</u> GZA Staff/Sampler <u>BR</u>	
Air Temperature (°F): <u>50's</u> Weather Conditions: <u>Rain</u>			MEASURING EQUIPMENT Measuring Device: <u>Keck</u> FiberglassTape Electric Tape Interface Meter Other					Abbreviations: PVC = Top of PVC well riser. Stl = Top of steel well casing/protector. Grnd = Relative to ground surface.	
Time	Well/Stream Gauge I.D.	Depth to Water (ft)	Total Depth of Well (ft)	Measmnt. Datum PVC/Stl/Grnd	DNAPL Thickness (ft)	LNAPL Thickness (ft)	Correct. Factor (ft)	Comments/Well Condition	
800	MW-6	5.73	27.5	PVC	-	-	-	Good	
	MW-5S	9.20	30.10	PVC	-	-	-	Good	
	MW-5D	10.23	56.60	PVC	-	-	-	Good	
	MW-7BD	17.02	127	STL	-	-	-	Good	
	WC-3	9.14	20.4	PVC	-	-	-	Good	
	WC-4	9.90	21.9	PVC	-	-	-	Good	
	WC-4D	8.27	33.4	PVC	-	-	-	Good	
	MW-4BD	9.67	144	STL	-	-	-	Good	
	MW-1BD	7.72	135	STL	-	-	-	Good	
	WC-1A	9.05	36.65	PVC	-	-	-	Good	
	WC-2	8.94	22.05	PVC	-	-	-	Good	
	WC-1D	8.47	52.9	PVC	-	-	-	Good	
	MW-3D	10.71	56.5	PVC	-	-	-	Good	
	MW-3S	10.94	16.9	PVC	-	-	-	Good	
	MW-3BD	11.17	124	STL	-	-	-	Good	
	MW-15D	8.24	-	PVC	-	-	-	Good	
	MW-15M	8.10	-	PVC	-	-	-	Good	
	MW-15S	8.23	16.4	PVC	-	-	-	Good	
	MW-10M	7.92	28.9	PVC	-	-	-	Good	
	MW-10D	7.96	49.4	PVC	-	-	-	Good	
	MW-10S	7.89	14.5	PVC	-	-	-	Good	
	MW-2	9.18	16.85	PVC	-	-	-	Good	
	MW-11S	7.55	14.8	PVC	-	-	-	Good	
	MW-11M	7.96	38.6	PVC	-	-	-	Good	
	MW-11D	8.12	69.9	PVC	-	-	-	Good	

WATER LEVEL MEASUREMENT LOG

GZA GeoEnvironmental, Inc.
655 Winding Brook Dr, Suite 402
Glastonbury, CT 06033
Phone: (860) 286-8900

Project Name	<u>PROJECT</u> Whyco Technologies
--------------	--------------------------------------

Date: 4/25/2018
File No. 05.0044541.10

Location:	Thomaston, CT
-----------	---------------

GZA Staff/Sampler	BR
-------------------	----

MEASURING EQUIPMENT

Air Temperature (°F): 50w

Weather Conditions: Rain

Measuring Device: Keck

FiberglassTape	Electric Tape	Interface Meter	Other
----------------	---------------	-----------------	-------

Electric Tape	Interface Meter	Other
---------------	-----------------	-------

Interface Meter	Other
-----------------	-------

Other

Abbreviations:

PVC = Top of PVC well riser.

Stl = Top of steel well casing/protector.

Grnd = Relative to ground surface.

[illegible]

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-1BD
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No: 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 326.62
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 325.60
Difference Between PVC and Casing Top (feet): 0 Difference in Elevation (feet): 1.02
Well Screened Interval (fbg) 75-135 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	135.00	133.98	
Depth to Water (feet):	7.72	6.7	Total Purged Sample Volume 2.15 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	127.28	127.28	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes / No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) _____ ppmv Methane (FID/Other) _____ ppmv Other _____ ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1115	1130	1133	1136						1136
Depth to Water (ft) below Ref. point (drawdown <0.3)	7.72	7.75	7.75	7.75						7.75
Volume Purged (L)		2.25	2.7	3.15						3.15
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		11.67	11.70	11.71						11.71
Spec. Cond. (3%) (µS)		442	441	441						441
Salinity (3%) (ppt)		0.21	0.21	0.21						0.21
DO (10%) (mg/L)		0.51	0.49	0.49						0.49
pH (+/- 0.1) (s.u.)		8.45	8.41	8.39						8.39
ORP** (+/- 10) (mvolts)		-57.4	-55.6	-52.3						-52.3
Turbidity (<5) (10%) (ntu)		4.19	4.10	3.86						3.86

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 10.5' Sample Time: 1136 Sample ID: MW-1BD
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

MS/MSD

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-2
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 328.49
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.50
Difference Between PVC and Casing Top (feet): 0.47 Difference in Elevation (feet): 0.59
Well Screened Interval (fbg) 12-22 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	18.90	17.91	
Depth to Water (feet):	9.18	8.59	
Standing Water in Well (feet):	9.72	9.32	

Total Purged Sample Volume 3.15 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1015	1030	1033	1036						1036
Depth to Water (ft) below Ref. point (drawdown <0.3)	9.18	9.21	9.21	9.21						9.21
Volume Purged (L)		2.25	2.7	3.15						3.15
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		6.97	7.00	6.91						6.91
Spec. Cond. (3%) (µS)		299	297	296						296
Salinity (3%) (ppt)		0.14	0.14	0.14						0.14
DO (10%) (mg/L)		3.41	3.42	3.48						3.48
pH (+/- 0.1) (s.u.)		6.57	6.59	6.61						6.61
ORP** (+/- 10) (mvolts)		24.3	23.1	21.1						21.1
Turbidity (<5) (10%) (ntu)		0.01	0.01	0.01						0.01

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 17' Sample Time: 1036 Sample ID: MW-2
(below grade ___ or ref. pt. X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-3
Sample Date: 4/26/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 329.27
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.30
Difference Between PVC and Casing Top (feet): 0.08 Difference in Elevation (feet): 2.47
Well Screened Interval (fbg) 8-18 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method _____

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	16.90	14.43	
Depth to Water (feet):	10.98	8.47	Total Purged Sample Volume 3.15 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	5.92	5.96	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) _____ ppmv Methane (FID/Other) _____ ppmv Other _____ ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐ _____
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐ _____

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	838	853	856	859						859
Depth to Water (ft) below Ref. point (drawdown <0.3)	10.95	10.97	10.97	10.97						10.97
Volume Purged (L)		2.25	2.7	3.15						3.15
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		10.17	10.17	10.19						10.19
Spec. Cond. (3%) (µS)		264	264	264						264
Salinity (3%) (ppt)		0.13	0.13	0.13						0.13
DO (10%) (mg/L)		1.52	1.48	1.49						1.49
pH (+/- 0.1) (s.u.)		6.35	6.39	6.42						6.42
ORP** (+/- 10) (mvolts)		27.1	25.9	25.3						25.3
Turbidity (<5) (10%) (ntu)		0.01	0.01	0.01						0.01

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 15' Sample Time: 859 Sample ID: MW-3
(below grade ___ or ref. pt. X)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-3BD
Sample Date: 4/26/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 330.07
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.50
Difference Between PVC and Casing Top (feet): 0 Difference in Elevation (feet): 2.53
Well Screened Interval (fbg) 65-125 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method _____

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	124.00	121.47	
Depth to Water (feet):	11.17	8.64	
Standing Water in Well (feet):	112.83	112.83	

Total Purged Sample Volume 4.2 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) _____ ppmv Methane (FID/Other) _____ ppmv Other _____ ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐ _____
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐ _____

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	905	920	923	926						926
Depth to Water (ft) below Ref. point (drawdown <0.3)	11.17	11.19	11.19	11.19						11.19
Volume Purged (L)		3.0	3.6	4.2						4.2
Purge Rate (ml/min)		200	200	200						200
Temperature (3%) °C		12.38	12.34	12.31						12.31
Spec. Cond. (3%) (µS)		751	749	752						752
Salinity (3%) (ppt)		0.37	0.37	0.37						0.37
DO (10%) (mg/L)		0.37	0.36	0.36						0.36
pH (+/- 0.1) (s.u.)		8.13	8.19	8.21						8.21
ORP** (+/- 10) (mvolts)		-150.3	-155.3	-156.2						-156.2
Turbidity (<5) (10%) (ntu)		1.96	1.73	1.54						1.54

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 95' Sample Time: 926 Sample ID: MW-3BD
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-4BD
Sample Date: 4/26/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 328.53
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 325.40
Difference Between PVC and Casing Top (feet): 0 Difference in Elevation (feet): 3.13
Well Screened Interval (fbg) 54-142 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	142.00	138.07	
Depth to Water (feet):	9.67	6.54	Total Purged Sample Volume 6.2 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	132.33	131.53	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1010	1025	1035	1038	1041					1041
Depth to Water (ft) below Ref. point (drawdown <0.3)	9.67	9.70	9.70	9.70	9.70					9.70
Volume Purged (L)		3.0	5.0	5.6	6.2					6.2
Purge Rate (ml/min)		200	200	200	200					200
Temperature (3%) °C		9.70	9.53	9.50	9.47					9.47
Spec. Cond. (3%) (µS)		109	122	123	123					123
Salinity (3%) (ppt)		0.05	0.06	0.06	0.06					0.06
DO (10%) (mg/L)		0.69	0.45	0.46	0.47					0.47
pH (+/- 0.1) (s.u.)		8.87	8.71	8.74	8.75					8.75
ORP** (+/- 10) (mvolts)		-49.9	-45.9	-46.3	-48.8					-48.8
Turbidity (<5) (10%) (ntu)		23.60	6.13	4.23	3.71					3.71

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 98 Sample Time: 1041 Sample ID: MW-4BD
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-8
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.87
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 328.20
Difference Between PVC and Casing Top (feet): 0.39 Difference in Elevation (feet): 0.39
Well Screened Interval (ftg) 10-20 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	15.50	15.89	
Depth to Water (feet):	7.15	7.54	
Standing Water in Well (feet):	8.35	8.35	

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1331	1346	1349	1352						1352
Depth to Water (ft) below Ref. point (drawdown <0.3)	7.15	7.19	7.19	7.19						7.19
Volume Purged (L)		3.0	3.0	4.2						4.2
Purge Rate (ml/min)		200	200	200						200
Temperature (3%) °C		9.05	9.05	9.03						9.03
Spec. Cond. (3%) (µS)		242	242	242						242
Salinity (3%) (ppt)		0.12	0.12	0.12						0.12
DO (10%) (mg/L)		4.12	4.05	4.01						4.01
pH (+/- 0.1) (s.u.)		6.45	6.44	6.43						6.43
ORP** (+/- 10) (mvolts)		15.2	15.0	14.9						14.9
Turbidity (<5) (10%) (ntu)		1.36	1.23	1.11						1.11

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 14' Sample Time: 1352 Sample ID: MW-8
(below grade ___ or ref. pt. X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-8
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.87
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 328.20
Difference Between PVC and Casing Top (feet): 0.39 Difference in Elevation (feet): 0.39
Well Screened Interval (ftg) 10-20 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method _____

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	15.50	15.89	
Depth to Water (feet):	7.15	7.54	
Standing Water in Well (feet):	8.35	8.35	

Total Purged Sample Volume _____ gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) _____ ppmv Methane (FID/Other) _____ ppmv Other _____ ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐ _____
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐ _____

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1331	1346	1349	1352						1352
Depth to Water (ft) below Ref. point (drawdown <0.3)	7.15	7.19	7.19	7.19						7.19
Volume Purged (L)		3.0	3.0	4.2						4.2
Purge Rate (ml/min)		200	200	200						200
Temperature (3%) °C		9.05	9.05	9.03						9.03
Spec. Cond. (3%) (µS)		242	242	242						242
Salinity (3%) (ppt)		0.12	0.12	0.12						0.12
DO (10%) (mg/L)		4.12	4.05	4.01						4.01
pH (+/- 0.1) (s.u.)		6.45	6.44	6.43						6.43
ORP** (+/- 10) (mvolts)		15.2	15.0	14.9						14.9
Turbidity (<5) (10%) (ntu)		1.36	1.23	1.11						1.11

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 14' Sample Time: 1352 Sample ID: MW-8
(below grade ___ or ref. pt. X)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-8D
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.94
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 328.15
Difference Between PVC and Casing Top (feet): 0.21 Difference in Elevation (feet): 0.21
Well Screened Interval (fbg) 90-100 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method _____

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	99.80	100.01	
Depth to Water (feet):	8.88	9.09	Total Purged Sample Volume 4.2 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	90.92	90.92	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) _____ ppmv Methane (FID/Other) _____ ppmv Other _____ ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐ _____
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐ _____

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1302	1317	1320	1323						1323
Depth to Water (ft) below Ref. point (drawdown <0.3)	8.88	8.94	8.94	8.94						8.94
Volume Purged (L)		3.0	3.0	4.2						4.2
Purge Rate (ml/min)		200	200	200						200
Temperature (3%) °C		9.07	9.08	9.10						9.10
Spec. Cond. (3%) (µS)		241	24	242						242
Salinity (3%) (ppt)		0.12	0.12	0.12						0.12
DO (10%) (mg/L)		4.87	4.87	4.85						4.85
pH (+/- 0.1) (s.u.)		5.93	5.96	5.98						5.98
ORP** (+/- 10) (mvolts)		13.4	11.6	11.1						11.1
Turbidity (<5) (10%) (ntu)		0.01	0.01	0.01						0.01

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 95' Sample Time: 1323 Sample ID: MW-8D
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-10M
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.25
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.50
Difference Between PVC and Casing Top (feet): 0.25 Difference in Elevation (feet): 0.25
Well Screened Interval (fbg) 24-29 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	28.80	29.05	
Depth to Water (feet):	7.92	8.17	Total Purged Sample Volume 3.15 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	20.88	20.88	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2)
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) Reading (#2)
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2)
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2)

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1044	1059	1102	1105						1105
Depth to Water (ft) below Ref. point (drawdown <0.3)	7.92	7.96	7.96	7.96						7.96
Volume Purged (L)		2.25	2.7	3.15						3.15
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		13.63	13.64	13.61						13.61
Spec. Cond. (3%) (µS)		188	188	188						188
Salinity (3%) (ppt)		0.09	0.09	0.09						0.09
DO (10%) (mg/L)		3.52	3.43	3.41						3.41
pH (+/- 0.1) (s.u.)		5.40	5.35	5.33						5.33
ORP** (+/- 10) (mvols)		5.7	2.7	2.2						2.2
Turbidity (<5) (10%) (ntu)		2.97	2.34	1.86						1.86

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 26.5' Sample Time: 1105 Sample ID: MW-10M
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-10D
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR

Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.23
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.44
Difference Between PVC and Casing Top (feet): 0.26 Difference in Elevation (feet): 0.26
Well Screened Interval (ftg) 40-50 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	49.40	49.66	
Depth to Water (feet):	7.99	8.25	
Standing Water in Well (feet):	41.41	41.41	

Total Purged Sample Volume 3.36 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1115	1130	1133	1136						1136
Depth to Water (ft) below Ref. point (drawdown <0.3)	7.96	8.01	8.01	8.01						8.01
Volume Purged (L)		2.25								
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		12.55	12.60	12.61						12.61
Spec. Cond. (3%) (µS)		287	290	291						291
Salinity (3%) (ppt)		0.14	0.14	0.14						0.14
DO (10%) (mg/L)		0.63	0.61	0.62						0.62
pH (+/- 0.1) (s.u.)		4.79	4.79	4.81						4.81
ORP** (+/- 10) (mvolts)		3.6	3.3	3.6						3.6
Turbidity (<5) (10%) (ntu)		4.19	3.52	3.04						3.04

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 45' Sample Time: 1136 Sample ID: MW-10D
(below grade ___ or ref. pt. X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-11M
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.44
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.69
Difference Between PVC and Casing Top (feet): 0.25 Difference in Elevation (feet): 0.25
Well Screened Interval (ftg) 34-39 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	38.65	38.90	
Depth to Water (feet):	7.96	8.21	Total Purged Sample Volume 3.15 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	30.69	30.69	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes / No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) _____ 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) _____ 1000/10/0.2 _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) _____ 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1148	1203	1206	1209						1209
Depth to Water (ft) below Ref. point (drawdown <0.3)	7.96	7.99	7.99	8.00						8.00
Volume Purged (L)		2.25	2.7	3.5						3.5
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		10.93	10.98	10.97						10.97
Spec. Cond. (3%) (µS)		249	249	250						250
Salinity (3%) (ppt)		0.12	0.12	0.12						0.12
DO (10%) (mg/L)		1.33	1.35	1.31						1.31
pH (+/- 0.1) (s.u.)		5.91	5.96	5.97						5.97
ORP** (+/- 10) (mvolts)		-13.1	-13.3	-13.7						-13.7
Turbidity (<5) (10%) (ntu)		1.36	1.21	1.18						1.18

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 36.5' Sample Time: 1209 Sample ID: MW-11D
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-11D
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.22
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 327.66
Difference Between PVC and Casing Top (feet): 0.44 Difference in Elevation (feet): 0.44
Well Screened Interval (fbg) 60-70 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	69.90	70.34	
Depth to Water (feet):	8.12	8.56	
Standing Water in Well (feet):	61.78	61.78	

Total Purged Sample Volume 3.36 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1218	1233	1243	1246	1249					1249
Depth to Water (ft) below Ref. point (drawdown <0.3)	8.12	8.17	8.17	8.17	8.17					8.17
Volume Purged (L)		2.25	3.75	4.20	4.7					4.7
Purge Rate (ml/min)		150	150	150	150					150
Temperature (3%) °C		11.14	11.22	11.26	11.23					11.23
Spec. Cond. (3%) (µS)		282	284	284	284					284
Salinity (3%) (ppt)		0.14	0.14	0.14	0.14					0.14
DO (10%) (mg/L)		0.45	0.46	0.47	0.48					0.48
pH (+/- 0.1) (s.u.)		6.26	6.29	6.28	6.27					6.27
ORP** (+/- 10) (mvolts)		12.9	12.8	13.1	13.0					13.0
Turbidity (<5) (10%) (ntu)		18.21	4.23	4.01	3.93					3.93

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 65' Sample Time: 1249 Sample ID: MW-11D
(below grade ___ or ref. pt. X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: WC-1A
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.39
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 325.50
Difference Between PVC and Casing Top (feet): 0.07 Difference in Elevation (feet): 1.89
Well Screened Interval (fbg) 25-35 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	36.65	34.76	
Depth to Water (feet):	9.05	8.16	
Standing Water in Well (feet):	27.6	26.6	

Total Purged Sample Volume 3.15 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2)
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) Reading (#2)
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2)
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2)

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1142	1157	1200	1203						1203
Depth to Water (ft) below Ref. point (drawdown <0.3)	9.06	9.08	9.08	9.08						9.08
Volume Purged (L)		2.25	2.7	3.15						3.15
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		12.61	12.62	12.65						12.65
Spec. Cond. (3%) (µS)		220	220	220						220
Salinity (3%) (ppt)		0.10	0.10	0.10						0.10
DO (10%) (mg/L)		3.92	3.90	3.87						3.87
pH (+/- 0.1) (s.u.)		5.37	5.36	5.34						5.34
ORP** (+/- 10) (mvolts)		42.9	42.0	41.7						41.7
Turbidity (<5) (10%) (ntu)		2.32	1.29	0.96						0.96

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 30' Sample Time: 1203 Sample ID: WC-1A
(below grade or ref. pt. X)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

MS/MSD

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: WC-2
Sample Date: 4/25/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.25
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 325.40
Difference Between PVC and Casing Top (feet): 0.33 Difference in Elevation (feet): 1.85
Well Screened Interval (fbg) 5-20 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	22.05	20.20	
Depth to Water (feet):	8.94	7.09	
Standing Water in Well (feet):	13.11	13.11	

Total Purged Sample Volume 4.2 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 Reading (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 Reading (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1218	1233	1236	1239						1239
Depth to Water (ft) below Ref. point (drawdown <0.3)	8.96	8.99	8.99	9.00						9.00
Volume Purged (L)		3.0	3.6	4.2						4.2
Purge Rate (ml/min)		200	200	200						200
Temperature (3%) °C		12.90	12.92	12.95						12.95
Spec. Cond. (3%) (µS)		193	193	192						192
Salinity (3%) (ppt)		0.09	0.09	0.09						0.09
DO (10%) (mg/L)		5.26	5.23	5.22						5.22
pH (+/- 0.1) (s.u.)		5.49	5.49	5.45						5.45
ORP** (+/- 10) (mvolts)		35.4	34.1	32.6						32.6
Turbidity (<5) (10%) (ntu)		0.01	0.01	0.01						0.01

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 14' Sample Time: 1239 Sample ID: WC-2
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: WC-3
Sample Date: 4/26/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 326.05
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 324.70
Difference Between PVC and Casing Top (feet): 0.36 Difference in Elevation (feet): 1.35
Well Screened Interval (ftbg) 7-22 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	26.40	25.05	
Depth to Water (feet):	9.14	7.79	
Standing Water in Well (feet):	17.26	17.26	

Total Purged Sample Volume 3.15 gallons or ☐ liters ☒
Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) _____ ppmv Methane (FID/Other) _____ ppmv Other _____ ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2) _____
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) _____ Reading (#2) _____
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2) _____
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2 (#2) _____
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2) _____

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	935	949	952	955						955
Depth to Water (ft) below Ref. point (drawdown <0.3)	9.16	9.18	9.18	9.18						9.18
Volume Purged (L)		2.25	2.7	3.5						3.5
Purge Rate (ml/min)		150	150	150						150
Temperature (3%) °C		7.71	7.68	7.65						7.65
Spec. Cond. (3%) (µS)		178	180	180						180
Salinity (3%) (ppt)		0.08	0.06	0.06						0.06
DO (10%) (mg/L)		4.99	5.02	5.06						5.06
pH (+/- 0.1) (s.u.)		6.06	6.09	6.11						6.11
ORP** (+/- 10) (mvolts)		77.4	73.4	71.0						71.0
Turbidity (<5) (10%) (ntu)		0.36	0.21	0.14						0.14

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 17' Sample Time: 955 Sample ID: WC-3
(below grade ___ or ref. pt. X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)

GROUNDWATER SAMPLING DATA SHEET

Well ID: WC-4
Sample Date: 4/26/2018

PROJECT INFORMATION

Project Name: Whyco Technologies Location: Thomaston, CT File No. 05.0044541.10

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 4/25/2018 Collector Initials: BDR
Reference Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐ Reference Elevation (feet) 327.34
Well Completion: Stand Pipe ☒ Road Box ☐ Ground Elevation (feet) 325.10
Difference Between PVC and Casing Top (feet): 0.02 Difference in Elevation (feet): 2.24
Well Screened Interval (fbg) 7-22 (Reference Elevation - Ground Elevation)
HACH Kit Type NA Other Field Method

	Depth from Ref. Point	Depth Below Ground	(Reference Point Measurement - Difference in Elevation)
Total Length of Well (feet):	21.90	19.66	
Depth to Water (feet):	9.90	7.66	Total Purged Sample Volume 4.2 gallons or <input type="checkbox"/> liters <input checked="" type="checkbox"/>
Standing Water in Well (feet):	12.00	12.00	Multiply liters by 0.2642 to get gallons

Well Condition: Protective Casing - poor / good; Lock - Yes / No; Expansion Cap - Yes/No; Well ID - Yes / No; Concrete Collar - Yes / No; Well - poor / good
Well head vapors: VOCs (PID/FID) ppmv Methane (FID/Other) ppmv Other ppmv

Sample Method: Bail ☐ Grab ☐ Pump ☐ Low Flow ☒ Purge Method: Bail ☐ Pump ☒ Flow-Thru Cell Vol: (460mL) ☒ Other: ☐
Pump Type: Electric Submersible ☐ Peristaltic ☒ Bladder Pump ☐ Other: ☐

CALIBRATION DATA:

Temp/time (#1) 12.01/0690 Temp/time (#2)
Specific Conductance: Instrument Model: YSI 556 Standard Solution: 1413 Reading (#1) Reading (#2)
pH (s.u.): Instrument Model: YSI 556 Reading: pH 4: (1/2) 4 pH 7: (1/2) 7 pH 10: (1/2) 10.05
DO (mg/L): Instrument Model: YSI 556 Standard Solution: 100% Reading (#1) 100.00% (#2)
Turbidity (NTU): Instrument Model: Micro TPI Standard Solution: 1000/10/0.2 Reading (#1) 1000/10/0.2
ORP (mvolts): Instrument Model: YSI 556 Standard Solution: 237.5 Reading (#1) 237.5 (#2)

INSTRUMENT MEASUREMENTS:

Parameters	Static*	1	2	3	4	5	6	7	8	Stabilized
Time:	1047	1102	1105	1108						1108
Depth to Water (ft) below Ref. point (drawdown <0.3)	9.91	9.94	9.94	9.94						9.94
Volume Purged (L)		3.0	3.6	4.2						4.2
Purge Rate (ml/min)		200	200	200						200
Temperature (3%) °C		8.68	8.64	8.62						8.62
Spec. Cond. (3%) (µS)		226	225	225						225
Salinity (3%) (ppt)		0.11	0.11	0.11						0.11
DO (10%) (mg/L)		1.32	1.0	1.29						1.29
pH (+/- 0.1) (s.u.)		6.57	6.59	6.61						6.61
ORP** (+/- 10) (mvolts)		7.1	6.7	5.4						5.4
Turbidity (<5) (10%) (ntu)		0.01	0.01	0.01						0.01

*Static measurement is before installation of equipment.

**If ORP is negative and DO is greater than 2 mg/L or if DO is greater than 10 mg/L; recalibrate and/or clean instrument. If persistent call PM.

SAMPLING INFORMATION

Sample Depth: 17 Sample Time: 1108 Sample ID: WC-4
(below grade ___ or ref. pt. _X_)

Analysis	Method	No. Bottles	Bottle Type	Vol.	Preservation	Handling
Metals		1	Plastic	250 ml	HNO3	Cooler/Ice
Hex Chrom		1	Plastic	250 ml		Cooler/Ice

NOTES/OBSERVATIONS:

Color: Clear Odor: None Product Thickness: NA Well Condition: Good
(Call PM if present)



APPENDIX C LABORATORY ANALYTICAL REPORTS



Friday, April 27, 2018

**Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033**

**Project ID: WHYCO
Sample ID#s: CA36000 - CA36006**

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,


Phyllis Shiller
Laboratory Director

**NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B**

**NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301**



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

<u>Date</u>	<u>Time</u>
04/25/18	10:36
04/25/18	15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36000

Project ID: WHYCO
Client ID: MW-2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.09	0.01	mg/L	1	04/25/18 17:54	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date

04/25/18
04/25/18

Time

11:05
15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36001

Project ID: WHYCO
Client ID: MW-10M

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.35	0.01	mg/L	1	04/25/18 17:58	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

<u>Date</u>	<u>Time</u>
04/25/18	11:36
04/25/18	15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36002

Project ID: WHYCO
Client ID: MW-10D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	04/25/18 17:59	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date

04/25/18
04/25/18

Time

12:09
15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36003

Project ID: WHYCO
Client ID: MW-11M

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.05	0.01	mg/L	1	04/25/18 18:00	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

<u>Date</u>	<u>Time</u>
04/25/18	12:49
04/25/18	15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36004

Project ID: WHYCO
Client ID: MW-11D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	04/25/18 18:00	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date Time

04/25/18 13:23
04/25/18 15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36005


Project ID: WHYCO
Client ID: MW-8D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.04	0.01	mg/L	1	04/25/18 18:01	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director
April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 27, 2018

FOR: Attn: Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44547

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

<u>Date</u>	<u>Time</u>
04/25/18	13:52
04/25/18	15:55

Laboratory Data

SDG ID: GCA36000
Phoenix ID: CA36006

Project ID: WHYCO
Client ID: MW-8

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.02	0.01	mg/L	1	04/25/18 18:01	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

April 27, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045

Tel. (860) 645-1102

Fax (860) 645-0823

QA/QC Report

April 27, 2018

QA/QC Data

SDG I.D.: GCA36000

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 428061 (mg/L), QC Sample No: CA35755 (CA36000, CA36001, CA36002, CA36003, CA36004, CA36005, CA36006)													
Chromium, Hexavalent	BRL	0.01	<0.01	<0.01	NC	99.5			106			90 - 110	20

Comment:

Additional Hexavalent Chromium criteria: LCS acceptance range for waters is 90-110% and MS acceptance range is 85-115%.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis Shiller, Laboratory Director

April 27, 2018

Friday, April 27, 2018
Criteria: CT: GWP, SWP
State: CT

Sample Criteria Exceedances Report
GCA36000 - GZACTENG

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL	Analysis Units
CA36001	HEXCRWM	Chromium, Hexavalent	CT / RSR SWPC (ug/l) / Inorganics	0.35	0.01	0.11	0.11	mg/L

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



REASONABLE CONFIDENCE PROTOCOL LABORATORY ANALYSIS QA/QC CERTIFICATION FORM

Laboratory Name: Phoenix Environmental Labs, Inc.

Client: GZA GeoEnvironmental, Inc.

Project Location: WHYCO

Project Number:

Laboratory Sample ID(s): CA36000-CA36006

Sampling Date(s): 4/25/2018

List RCP Methods Used (e.g., 8260, 8270, et cetera) None

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1A	Were the method specified preservation and holding time requirements met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1B	<u>VPH and EPH methods only:</u> Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
2	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Were samples received at an appropriate temperature (< 6 Degrees C)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7	Are project-specific matrix spikes and laboratory duplicates included in the data set?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence". This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Rashmi Makol **Position:** Project Manager

Printed Name: Rashmi Makol **Date:** Friday, April 27, 2018

Name of Laboratory Phoenix Environmental Labs, Inc.

This certification form is to be used for RCP methods only.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



RCP Certification Report

April 27, 2018

SDG I.D.: GCA36000

SDG Comments

No RCP analyses are included with this report. The RCP narrative is provided at the request of the client.

Hexavalent Chromium (Aqueous)

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument:

BECKMAN DU720 04/25/18-1 Dustin Harrison, Chemist 04/25/18

CA36000, CA36001, CA36002, CA36003, CA36004, CA36005, CA36006

The initial calibration met all criteria including a standard run at the reporting level.

All calibration verification standards (ICV, CCV) met criteria.

All calibration blank verification standards (ICB, CCB) met criteria.

QC (Batch Specific):

Batch 428061 (CA35755)

CA36000, CA36001, CA36002, CA36003, CA36004, CA36005, CA36006

All LCS recoveries were within 90 - 110 with the following exceptions: None.

Additional Hexavalent Chromium criteria: LCS acceptance range for waters is 90-110% and MS acceptance range is 85-115%.

Temperature Narration

The samples were received at 2.4C with cooling initiated.

(Note acceptance criteria for relevant matrices is above freezing up to 6°C)

CHAIN OF CUSTODY RECORD



PHOENIX

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823

Client Services (860) 645-8726

Customer: 62A

Address: Glastenbury CT

Project:

Report to:

Invoice to:

myco

ris' Frey Ben Reub

Free

Project P.O.: 44547

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature [Signature] Date: 4-25-16

Matrix Code:
 DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
 RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
 B=Bulk L=Liquid

HOENIX USE ONLY	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Time
36000	mw-2	6w	4-5-18	1036	
36001	mw-10m			1105	
36002	mw-10D			1136	
36003	mw-11m			1209	
36004	mw-11D			1249	
36005	mw-8D			1323	
36006	mw-b			1352	

Relinquished by:	Accepted by:
	

Comments, Special Requirements or Regulations:	Turnaround:
	<input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Days* <input type="checkbox"/> 3 Days* <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other

*** SURCHARGE APPLIES**

State where samples were collected.

* SURCHARGE APPLIES

CT		MA		Data Format	
<input type="checkbox"/> Direct Exposure (Residential)	<input type="checkbox"/> RCP Cert	<input type="checkbox"/> MCP Certification	<input checked="" type="checkbox"/> Excel	<input checked="" type="checkbox"/> PDF	<input checked="" type="checkbox"/> GIS/Key
<input type="checkbox"/> GW	<input checked="" type="checkbox"/> GW Protection	<input type="checkbox"/> GW-1	<input checked="" type="checkbox"/> EquiS	<input checked="" type="checkbox"/> Other	<input type="checkbox"/> Tier II Chn
<input type="checkbox"/> Other	<input checked="" type="checkbox"/> SW Protection	<input type="checkbox"/> GW-2	<input type="checkbox"/> S-1	<input type="checkbox"/> Full Data	<input checked="" type="checkbox"/> Phoenix
	<input type="checkbox"/> GA Mobility	<input type="checkbox"/> GW-3	<input type="checkbox"/> S-2	<input checked="" type="checkbox"/> Other	<input type="checkbox"/> Other
	<input type="checkbox"/> GB Mobility	<input type="checkbox"/> S-3	<input type="checkbox"/> MWRA eSMART		
	<input type="checkbox"/> Residential DEC	<input type="checkbox"/> Other			
	<input type="checkbox"/> I/C DEC				
	<input type="checkbox"/> Other				

Data Format	<input checked="" type="checkbox"/> Excel	<input checked="" type="checkbox"/> PDF	<input type="checkbox"/> GIS/Key	<input type="checkbox"/> EquiS	<input type="checkbox"/> Other
Data Package	<input type="checkbox"/> Tier II Checklist	<input type="checkbox"/> Full Data Package*	<input checked="" type="checkbox"/> Phoenix Std Report	<input type="checkbox"/> Other	



Monday, April 30, 2018

**Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033**

**Project ID: WHYCO
Sample ID#s: CA36907 - CA36914**

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

A handwritten signature in cursive script that reads "Phyllis Shiller".

**Phyllis Shiller
Laboratory Director**

**NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B**

**NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301**



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date

04/26/18
04/26/18

Time

8:59
15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36907

Project ID: WHYCO
Client ID: MW-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.09	0.01	mg/L	1	04/26/18 17:55	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date

04/26/18
04/26/18

Time

9:26
15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36908

Project ID: WHYCO
Client ID: MW-3BD

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	04/26/18 17:55	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date

04/26/18
04/26/18

Time

9:55
15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36909

Project ID: WHYCO
Client ID: WC-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.04	0.01	mg/L	1	04/26/18 17:57	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date

04/26/18
04/26/18

Time

10:41
15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36910


Project ID: WHYCO
Client ID: MW-4BD

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	04/26/18 17:57	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director
April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date Time

04/26/18 11:08
04/26/18 15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36911

Project ID: WHYCO
Client ID: WC-4

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.04	0.01	mg/L	1	04/26/18 17:58	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date Time

04/26/18 11:36
04/26/18 15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36912

Project ID: WHYCO
Client ID: MW-1BD

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	04/26/18 17:59	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

<u>Date</u>	<u>Time</u>
04/26/18	12:03
04/26/18	15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36913

Project ID: WHYCO
Client ID: WC-1A

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	1.37	0.01	mg/L	1	04/26/18 17:51	O	SM3500CRB-11
Client MS/MSD	Completed				04/26/18		

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 30, 2018

FOR: Attn: Mr. Chris Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive
Suite 402
Glastonbury, CT 06033

Sample Information

Matrix: GROUND WATER
Location Code: GZACTENG
Rush Request: Standard
P.O.#: 44541

Custody Information

Collected by: BR
Received by: LB
Analyzed by: see "By" below

Date

04/26/18
04/26/18

Time

12:39
15:44

Laboratory Data

SDG ID: GCA36907
Phoenix ID: CA36914


Project ID: WHYCO
Client ID: WC-2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chromium, Hexavalent	0.55	0.01	mg/L	1	04/26/18 17:59	O	SM3500CRB-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director
April 30, 2018

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045

Tel. (860) 645-1102

Fax (860) 645-0823

QA/QC Report

April 30, 2018

QA/QC Data

SDG I.D.: GCA36907

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 428258 (mg/L), QC Sample No: CA36913 (CA36907, CA36908, CA36909, CA36910, CA36911, CA36912, CA36913, CA36914)													
Chromium, Hexavalent	BRL	0.01	1.37	1.36	0.70	100			95.0			90 - 110	20

Comment:

Additional Hexavalent Chromium criteria: LCS acceptance range for waters is 90-110% and MS acceptance range is 85-115%.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

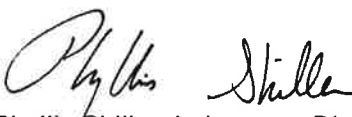
LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference


Phyllis Shiller, Laboratory Director
April 30, 2018

Monday, April 30, 2018

Criteria: None

State: CT

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL	Criteria	Analysis Units
--------	-------	-----------------	----------	--------	----	----------	----	----------	----------------

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Sample Criteria Exceedences Report

GCA36907 - GZACTENG



REASONABLE CONFIDENCE PROTOCOL LABORATORY ANALYSIS QA/QC CERTIFICATION FORM

Laboratory Name: Phoenix Environmental Labs, Inc.

Client: GZA GeoEnvironmental, Inc.

Project Location: WHYCO

Project Number:

Laboratory Sample ID(s): CA36907-CA36914

Sampling Date(s): 4/26/2018

List RCP Methods Used (e.g., 8260, 8270, et cetera) None

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1A	Were the method specified preservation and holding time requirements met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1B	<u>VPH and EPH methods only:</u> Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
2	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Were samples received at an appropriate temperature (< 6 Degrees C)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7	Are project-specific matrix spikes and laboratory duplicates included in the data set?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence". This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Rashmi Makol **Position:** Project Manager

Printed Name: Rashmi Makol **Date:** Monday, April 30, 2018

Name of Laboratory Phoenix Environmental Labs, Inc.

This certification form is to be used for RCP methods only.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



RCP Certification Report

April 30, 2018

SDG I.D.: GCA36907

SDG Comments

No RCP analyses are included with this report. The RCP narrative is provided at the request of the client.

Hexavalent Chromium (Aqueous)

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument:

BECKMAN DU720 04/26/18-1 Dustin Harrison, Chemist 04/26/18

CA36907, CA36908, CA36909, CA36910, CA36911, CA36912, CA36913, CA36914

The initial calibration met all criteria including a standard run at the reporting level.

All calibration verification standards (ICV, CCV) met criteria.

All calibration blank verification standards (ICB, CCB) met criteria.

QC (Site Specific):

Batch 428258 (CA36913)

CA36907, CA36908, CA36909, CA36910, CA36911, CA36912, CA36913, CA36914

All LCS recoveries were within 90 - 110 with the following exceptions: None.

All MS recoveries were within 85 - 115 with the following exceptions: None.

Additional Hexavalent Chromium criteria: LCS acceptance range for waters is 90-110% and MS acceptance range is 85-115%.

Temperature Narration

The samples were received at 1.0C with cooling initiated.

(Note acceptance criteria for relevant matrices is above freezing up to 6°C)



CERTIFICATE OF ANALYSIS

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive Suite 402
Glastonbury, CT 06033

RE: Whyco (05.0044541)

ESS Laboratory Work Order Number: 1804773

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 2:41 pm, May 03, 2018

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

SAMPLE RECEIPT

The following samples were received on April 26, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve Reasonable Confidence Protocols (RCP) compliance for Connecticut data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All RCP requirements have been performed and achieved unless noted in the project narrative.

Question 5: Each method has been set-up in the laboratory to reach required RCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes (ie for GWPC samples, 1,2-Dibromoethane regulatory levels will not be met by VOA 8260. If this is a contaminant of concern Method 8011 will need to be used.). The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question 6: All samples for Metals were analyzed for a subset of the required RCP list per the client's request.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
804773-01	MW-2	Ground Water	6010C
804773-02	MW-10M	Ground Water	6010C
804773-03	MW-10D	Ground Water	6010C
804773-04	MW-11M	Ground Water	6010C
804773-05	MW-11D	Ground Water	6010C
804773-06	MW-8D	Ground Water	6010C
804773-07	MW-8	Ground Water	6010C



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[Definitions of Quality Control Parameters](#)

[Semi-volatile Organics Internal Standard Information](#)

[Semi-volatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[PH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

010A - Flashpoint
010C - ICP
020A - ICP MS
010 - Graphite Furnace
196A - Hexavalent Chromium
470A - Aqueous Mercury
471B - Solid Mercury
011 - EDB/DBCP/TCP
015C - GRO/DRO
081B - Pesticides
082A - PCB
100M - TPH
151A - Herbicides
260B - VOA
270D - SVOA
270D SIM - SVOA Low Level
014 - Cyanide
038 - Sulfate
040C - Aqueous pH
045D - Solid pH (Corrosivity)
050A - Specific Conductance
056A - Anions (IC)
060A - TOC
095B - Paint Filter
1ADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

W846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

**Laboratory Analysis
QA/QC Certification Form**

Project Number: 05.0044541

Sampling Date(s): 4/25/2018

Laboratory Sample ID(s): 1804773-01 through 1804773-07

List RCP Methods Used () 8260B () 8151A () ETPH (X) 6010B () 7470A/1A
Other: _____ () 8270C () 8081A () VPH () 6020 () 9014M
_____ () 8082 () 8021B () EPH () 7000 S () 7196A

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria failing outside of acceptable guidelines, as specified in the CTDEP method-specific Reasonable Confidence Protocol documents?	Yes (X) No ()
1A	Were the method specified preservation and holding time requirements met?	Yes (X) No ()
1B	<u>VPH and EPH Methods only:</u> Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	Yes () No () N/A (X)
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	Yes (X) No ()
3	Were samples received at an appropriate temperature (<6° C°)?	Yes (X) No () N/A ()
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	Yes (X) No ()
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	Yes (X) No () Yes (X) No ()
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	Yes () No (X)
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	Yes () No (X)

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence." This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Laurel Stoddard

Position: Laboratory Director

Printed Name: Laurel Stoddard

Date: May 03, 2018

Name of Laboratory: ESS Laboratory



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: MW-2

Date Sampled: 04/25/18 10:36

Percent Solids: N/A

ESS Laboratory Work Order: 1804773

ESS Laboratory Sample ID: 1804773-01

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (2.5)		6010C		1	KJK	04/27/18 23:17	50	25	CD82739
Chromium	107 (10.0)		6010C		1	KJK	04/27/18 23:17	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:17	50	25	CD82739
Copper	ND (10.0)		6010C		1	KJK	04/27/18 23:17	50	25	CD82739
Nickel	421 (25.0)		6010C		1	KJK	04/27/18 23:17	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: MW-10M
Date Sampled: 04/25/18 11:05
Percent Solids: N/A

ESS Laboratory Work Order: 1804773
ESS Laboratory Sample ID: 1804773-02
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	6.5 (2.5)		6010C		1	KJK	04/27/18 23:21	50	25	CD82739
Chromium	392 (10.0)		6010C		1	KJK	04/27/18 23:21	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:21	50	25	CD82739
Copper	ND (10.0)		6010C		1	KJK	04/27/18 23:21	50	25	CD82739
Nickel	76.5 (25.0)		6010C		1	KJK	04/27/18 23:21	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: MW-10D

Date Sampled: 04/25/18 11:36

Percent Solids: N/A

ESS Laboratory Work Order: 1804773

ESS Laboratory Sample ID: 1804773-03

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	3.1 (2.5)		6010C		1	KJK	04/27/18 23:25	50	25	CD82739
Chromium	35.9 (10.0)		6010C		1	KJK	04/27/18 23:25	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:25	50	25	CD82739
Copper	11.9 (10.0)		6010C		1	KJK	04/27/18 23:25	50	25	CD82739
Nickel	127 (25.0)		6010C		1	KJK	04/27/18 23:25	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: MW-11M
Date Sampled: 04/25/18 12:09
Percent Solids: N/A

ESS Laboratory Work Order: 1804773
ESS Laboratory Sample ID: 1804773-04
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	ND (2.5)		6010C		1	KJK	04/27/18 23:29	50	25	CD82739
Chromium	56.2 (10.0)		6010C		1	KJK	04/27/18 23:29	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:29	50	25	CD82739
Copper	ND (10.0)		6010C		1	KJK	04/27/18 23:29	50	25	CD82739
Nickel	98.1 (25.0)		6010C		1	KJK	04/27/18 23:29	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: MW-11D

Date Sampled: 04/25/18 12:49

Percent Solids: N/A

ESS Laboratory Work Order: 1804773

ESS Laboratory Sample ID: 1804773-05

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (2.5)		6010C		1	KJK	04/27/18 23:46	50	25	CD82739
Chromium	ND (10.0)		6010C		1	KJK	04/27/18 23:46	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:46	50	25	CD82739
Copper	ND (10.0)		6010C		1	KJK	04/27/18 23:46	50	25	CD82739
Nickel	ND (25.0)		6010C		1	KJK	04/27/18 23:46	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: MW-8D
Date Sampled: 04/25/18 13:23
Percent Solids: N/A

ESS Laboratory Work Order: 1804773
ESS Laboratory Sample ID: 1804773-06
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>AnalYTE</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	ND (2.5)		6010C		1	KJK	04/27/18 23:50	50	25	CD82739
Chromium	48.0 (10.0)		6010C		1	KJK	04/27/18 23:50	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:50	50	25	CD82739
Copper	12.3 (10.0)		6010C		1	KJK	04/27/18 23:50	50	25	CD82739
Nickel	101 (25.0)		6010C		1	KJK	04/27/18 23:50	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: MW-8

Date Sampled: 04/25/18 13:52

Percent Solids: N/A

ESS Laboratory Work Order: 1804773

ESS Laboratory Sample ID: 1804773-07

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (2.5)		6010C		1	KJK	04/27/18 23:54	50	25	CD82739
Chromium	28.0 (10.0)		6010C		1	KJK	04/27/18 23:54	50	25	CD82739
Cobalt	ND (10.0)		6010C		1	KJK	04/27/18 23:54	50	25	CD82739
Copper	ND (10.0)		6010C		1	KJK	04/27/18 23:54	50	25	CD82739
Nickel	56.6 (25.0)		6010C		1	KJK	04/27/18 23:54	50	25	CD82739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

Quality Control Data

analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CD82739 - 3005A/200.7

Blank

Lead	ND	2.5	ug/L							
Chromium	ND	10.0	ug/L							
Cadmium	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							
Mercury	ND	25.0	ug/L							

SS

Lead	121	2.5	ug/L	125.0		96	80-120			
Chromium	253	10.0	ug/L	250.0		101	80-120			
Cadmium	263	10.0	ug/L	250.0		105	80-120			
Copper	255	10.0	ug/L	250.0		102	80-120			
Mercury	256	25.0	ug/L	250.0		102	80-120			

SS Dup

Lead	122	2.5	ug/L	125.0		97	80-120	1	20	
Chromium	251	10.0	ug/L	250.0		100	80-120	0.7	20	
Cadmium	267	10.0	ug/L	250.0		107	80-120	1	20	
Copper	251	10.0	ug/L	250.0		100	80-120	2	20	
Mercury	252	25.0	ug/L	250.0		101	80-120	2	20	



ESS Laboratory

Division of Thielsch Engineering, Inc.

BAL Laboratory

*The Microbiology Division
of Thielsch Engineering, Inc.*



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804773

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

<http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Glastonbury CT - GZA/MM

ESS Project ID: 1804773

Shipped/Delivered Via: ESS Courier

Date Received: 4/26/2018

Project Due Date: 5/3/2018

Days for Project: 5 Day

1. Air bill manifest present? ☐ No
Air No.: NA

6. Does COC match bottles? ☐ Yes

2. Were custody seals present? ☐ No

7. Is COC complete and correct? ☐ Yes

3. Is radiation count <100 CPM? ☐ Yes

8. Were samples received intact? ☐ Yes

4. Is a Cooler Present? ☐ Yes
Temp: 0.5 Iced with: Ice

9. Were labs informed about short holds & rushes? Yes / No / NA

5. Was COC signed and dated by client? ☐ Yes

10. Were any analyses received outside of hold time? Yes (No)

11. Any Subcontracting needed? Yes / No
ESS Sample IDs: _____
Analysis: _____
TAT: _____

12. Were VOAs received? Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
a. If metals preserved upon receipt; Date: _____
b. Low Level VOA vials frozen: Date: _____

Time: _____ By: _____
Time: _____ By: _____

Sample Receiving Notes:


14. Was there a need to contact Project Manager? Yes / No
a. Was there a need to contact the client? Yes / No
Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	222414	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
02	222415	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	222416	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
04	222417	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
05	222418	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
06	222419	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
07	222420	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
08	222743	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
09	222744	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
10	222745	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
11	222746	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
12	222747	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
12	222750	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
12	222751	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
13	222748	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
14	222749	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	<i>m 4/26/18</i>

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 4/26/18 18:57
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client:	GZA - Glastonbury CT - GZA/MM	ESS Project ID:	1804773
By:		Date Received:	4/26/2018
Delivered			
By:		Date & Time:	4/26/18 1941

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-
2211 Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time ☒ Standard ☐ Rush Approved By: _____

State where samples were collected: MA RI ☒ NH NJ NY ME Other _____

Is this project for any of the following: (please circle)
MA-MCP ☒ CT-RGP ☐ RGP Other _____

Reporting Limits -

Gwpc swpc

Yes ☒ No ☐

Format: Excel ☒ Access ☐ PDF ☒ Other _____

ESS LAB PROJECT ID

1834773

GZA Project Manager: Chris Prey

GZA GeoEnvironmental, Inc.

655 Winding Brook Drive, Suite 402

Glastonbury, CT 06033

(860) 286-8900

REASONABLE CONFIDENCE PROTOCOLS REQUIRED

ESS Lab Sample ID	Date	Collection Time	Grab - G Composite - C	Matrix	Sample Identification	Analysis	# of Containers	Comment #
1	4/25/18	1036	G	GW	MW-3	Metals (see bldg)	1	
2		1105			MW-10M		1	
3		1136			MW-10D		1	
4		1209			MW-11M		1	
5		1249			MW-11D		1	
6		1303			MW-8D		1	
7		1353			MW-E		1	

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Ascorbic Acid, 8-ZnAc2 9-

Container Type: P-Poly G-Glass ☒ G-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ☒ Yes ☐ No

Seals Intact ☒ Yes ☐ No

Cooler Temperature: 0.5 Yes

Relinquished by: (Signature)

Date/Time 4/25/18 16:05

Relinquished by: (Signature)

Date/Time 4/26/18 18:04

Sampled by: Ben Reek

Comments: metals = Cd, Cr, Ni, Co, Cu

Received by: (Signature)

Date/Time 4/25/18 16:05

Relinquished by: (Signature)

Date/Time 4/26/18 18:38

Relinquished by: (Signature)

Please E-mail all changes to Chain of Custody in writing.

CERTIFICATE OF ANALYSIS

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive Suite 402
Glastonbury, CT 06033

RE: Whyco (05.0044541)

ESS Laboratory Work Order Number: 1804834

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.



Laurel Stoddard
Laboratory Director

REVIEWED**By ESS Laboratory at 3:36 pm, May 04, 2018****Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

SAMPLE RECEIPT

The following samples were received on April 27, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve Reasonable Confidence Protocols (RCP) compliance for Connecticut data, ESS Laboratory has reviewed all EPA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All RCP requirements have been performed and achieved unless noted in the project narrative.

Question 5: Each method has been set-up in the laboratory to reach required RCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes (ie for GWPC samples, 1,2-Dibromoethane regulatory levels will not be met by VOA 8260. If this is a contaminant of concern Method 8011 will need to be used.). The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question 6: All samples for Metals were analyzed for a subset of the required RCP list per the client's request.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
804834-01	MW-3	Ground Water	6010C
804834-02	MW-3BD	Ground Water	6010C
804834-03	WC-3	Ground Water	6010C
804834-04	MW-4BD	Ground Water	6010C
804834-05	WC-4	Ground Water	6010C
804834-06	MW-1BD	Ground Water	6010C
804834-07	WC-1A	Ground Water	6010C
804834-08	WC-2	Ground Water	6010C



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[Definitions of Quality Control Parameters](#)

[Semi-volatile Organics Internal Standard Information](#)

[Semi-volatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[PH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

010A - Flashpoint
010C - ICP
020A - ICP MS
010 - Graphite Furnace
196A - Hexavalent Chromium
470A - Aqueous Mercury
471B - Solid Mercury
011 - EDB/DBCP/TCP
015C - GRO/DRO
081B - Pesticides
082A - PCB
100M - TPH
151A - Herbicides
260B - VOA
270D - SVOA
270D SIM - SVOA Low Level
014 - Cyanide
038 - Sulfate
040C - Aqueous pH
045D - Solid pH (Corrosivity)
050A - Specific Conductance
056A - Anions (IC)
060A - TOC
095B - Paint Filter
1ADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

W846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

**Laboratory Analysis
QA/QC Certification Form**

Project Number: 05.0044541

Sampling Date(s): 4/26/2018

Laboratory Sample ID(s): 1804834-01 through 1804834-08

List RCP Methods Used

() 8260B	() 8151A	() ETPH	<input checked="" type="checkbox"/> 6010B	() 7470A/1A
() 8270C	() 8081A	() VPH	() 6020	() 9014M
() 8082	() 8021B	() EPH	() 7000 S	() 7196A

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria failing outside of acceptable guidelines, as specified in the CTDEP method-specific Reasonable Confidence Protocol documents?	Yes <input checked="" type="checkbox"/> No ()
1A	Were the method specified preservation and holding time requirements met?	Yes <input checked="" type="checkbox"/> No ()
1B	<u>VPH and EPH Methods only:</u> Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	Yes () No () N/A <input checked="" type="checkbox"/>
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	Yes <input checked="" type="checkbox"/> No ()
3	Were samples received at an appropriate temperature (<6° C)?	Yes <input checked="" type="checkbox"/> No () N/A ()
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	Yes <input checked="" type="checkbox"/> No ()
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	Yes <input checked="" type="checkbox"/> No () Yes <input checked="" type="checkbox"/> No ()
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	Yes () No <input checked="" type="checkbox"/>
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	Yes <input checked="" type="checkbox"/> No ()

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence." This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Laurel Stoddard

Position: Laboratory Director

Printed Name: Laurel Stoddard

Date: May 04, 2018

Name of Laboratory: ESS Laboratory



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: MW-3

Date Sampled: 04/26/18 08:59

Percent Solids: N/A

ESS Laboratory Work Order: 1804834

ESS Laboratory Sample ID: 1804834-01

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (2.5)		6010C		1	KJK	05/01/18 19:15	50	25	CD83034
Chromium	97.5 (10.0)		6010C		1	KJK	05/01/18 19:15	50	25	CD83034
Cobalt	ND (10.0)		6010C		1	KJK	05/01/18 19:15	50	25	CD83034
Copper	ND (10.0)		6010C		1	KJK	05/01/18 19:15	50	25	CD83034
Nickel	35.8 (25.0)		6010C		1	KJK	05/01/18 19:15	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: MW-3BD
Date Sampled: 04/26/18 09:26
Percent Solids: N/A

ESS Laboratory Work Order: 1804834
ESS Laboratory Sample ID: 1804834-02
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	ND (2.5)		6010C		1	KJK	05/01/18 19:19	50	25	CD83034
Chromium	ND (10.0)		6010C		1	KJK	05/01/18 19:19	50	25	CD83034
Cobalt	ND (10.0)		6010C		1	KJK	05/01/18 19:19	50	25	CD83034
Copper	ND (10.0)		6010C		1	KJK	05/01/18 19:19	50	25	CD83034
Nickel	80.9 (25.0)		6010C		1	KJK	05/01/18 19:19	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: WC-3
Date Sampled: 04/26/18 09:55
Percent Solids: N/A

ESS Laboratory Work Order: 1804834
ESS Laboratory Sample ID: 1804834-03
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (2.5)		6010C		1	KJK	05/01/18 19:23	50	25	CD83034
Chromium	44.9 (10.0)		6010C		1	KJK	05/01/18 19:23	50	25	CD83034
Cobalt	ND (10.0)		6010C		1	KJK	05/01/18 19:23	50	25	CD83034
Copper	25.9 (10.0)		6010C		1	KJK	05/01/18 19:23	50	25	CD83034
Nickel	226 (25.0)		6010C		1	KJK	05/01/18 19:23	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: MW-4BD
Date Sampled: 04/26/18 10:41
Percent Solids: N/A

ESS Laboratory Work Order: 1804834
ESS Laboratory Sample ID: 1804834-04
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	ND (2.5)		6010C		1	KJK	05/01/18 19:28	50	25	CD83034
Chromium	ND (10.0)		6010C		1	KJK	05/01/18 19:28	50	25	CD83034
Cobalt	ND (10.0)		6010C		1	KJK	05/01/18 19:28	50	25	CD83034
Copper	ND (10.0)		6010C		1	KJK	05/01/18 19:28	50	25	CD83034
Nickel	ND (25.0)		6010C		1	KJK	05/01/18 19:28	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: WC-4

Date Sampled: 04/26/18 11:08

Percent Solids: N/A

ESS Laboratory Work Order: 1804834

ESS Laboratory Sample ID: 1804834-05

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (2.5)		6010C		1	KJK	05/01/18 19:44	50	25	CD83034
Chromium	40.4 (10.0)		6010C		1	KJK	05/01/18 19:44	50	25	CD83034
Cobalt	ND (10.0)		6010C		1	KJK	05/01/18 19:44	50	25	CD83034
Copper	25.9 (10.0)		6010C		1	KJK	05/01/18 19:44	50	25	CD83034
Nickel	195 (25.0)		6010C		1	KJK	05/01/18 19:44	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: MW-1BD
Date Sampled: 04/26/18 11:36
Percent Solids: N/A

ESS Laboratory Work Order: 1804834
ESS Laboratory Sample ID: 1804834-06
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyste</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
cadmium	ND (2.5)		6010C		1	KJK	05/01/18 19:49	50	25	CD83034
chromium	ND (10.0)		6010C		1	KJK	05/01/18 19:49	50	25	CD83034
cobalt	ND (10.0)		6010C		1	KJK	05/01/18 19:49	50	25	CD83034
copper	ND (10.0)		6010C		1	KJK	05/01/18 19:49	50	25	CD83034
nickel	ND (25.0)		6010C		1	KJK	05/01/18 19:49	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

Client Sample ID: WC-1A

Date Sampled: 04/26/18 12:03

Percent Solids: N/A

ESS Laboratory Work Order: 1804834

ESS Laboratory Sample ID: 1804834-07

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	15.5 (2.5)		6010C		1	KJK	05/01/18 19:53	50	25	CD83034
Chromium	1460 (10.0)		6010C		1	KJK	05/01/18 19:53	50	25	CD83034
Cobalt	15.3 (10.0)		6010C		1	KJK	05/01/18 19:53	50	25	CD83034
Copper	147 (10.0)		6010C		1	KJK	05/01/18 19:53	50	25	CD83034
Nickel	369 (25.0)		6010C		1	KJK	05/01/18 19:53	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

Quality Control Data

analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CB83034 - 3005A/200.7

Blank

Lead	ND	2.5	ug/L							
Chromium	ND	10.0	ug/L							
Cadmium	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							
Chloride	ND	25.0	ug/L							

Spikes

Lead	118	2.5	ug/L	125.0		95	80-120			
Chromium	237	10.0	ug/L	250.0		95	80-120			
Cadmium	245	10.0	ug/L	250.0		98	80-120			
Copper	243	10.0	ug/L	250.0		97	80-120			
Chloride	232	25.0	ug/L	250.0		93	80-120			

Spikes Dup

Lead	122	2.5	ug/L	125.0		98	80-120	3	20	
Chromium	246	10.0	ug/L	250.0		98	80-120	4	20	
Cadmium	252	10.0	ug/L	250.0		101	80-120	3	20	
Copper	255	10.0	ug/L	250.0		102	80-120	5	20	
Chloride	240	25.0	ug/L	250.0		96	80-120	3	20	

Replicate

Source: 1804834-07

Lead	15.9	2.5	ug/L		15.5			3	20	
Chromium	1470	10.0	ug/L		1460			1	20	
Cadmium	16.0	10.0	ug/L		15.3			5	20	
Copper	147	10.0	ug/L		147			0.02	20	
Chloride	374	25.0	ug/L		369			1	20	

Matrix Spike

Source: 1804834-07

Lead	138	2.5	ug/L	125.0	15.5	98	75-125			
Chromium	1770	10.0	ug/L	250.0	1460	125	75-125			
Cadmium	262	10.0	ug/L	250.0	15.3	99	75-125			
Copper	391	10.0	ug/L	250.0	147	97	75-125			
Chloride	614	25.0	ug/L	250.0	369	98	75-125			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Whyco
Client Sample ID: WC-2
Date Sampled: 04/26/18 12:39
Percent Solids: N/A

ESS Laboratory Work Order: 1804834
ESS Laboratory Sample ID: 1804834-08
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	12.5 (2.5)		6010C		1	KJK	05/01/18 20:14	50	25	CD83034
Chromium	577 (10.0)		6010C		1	KJK	05/01/18 20:14	50	25	CD83034
Cobalt	14.3 (10.0)		6010C		1	KJK	05/01/18 20:14	50	25	CD83034
Copper	57.9 (10.0)		6010C		1	KJK	05/01/18 20:14	50	25	CD83034
Nickel	394 (25.0)		6010C		1	KJK	05/01/18 20:14	50	25	CD83034



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Whyco

ESS Laboratory Work Order: 1804834

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/clap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_Opra/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

<http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Glastonbury CT - GZA/MM

ESS Project ID: 1804834

Shipped/Delivered Via: ESS Courier

Date Received: 4/27/2018

Project Due Date: 5/4/2018

Days for Project: 5 Day

1. Air bill manifest present? ☐ No
Air No.: NA

6. Does COC match bottles? ☐ Yes

2. Were custody seals present? ☐ No

7. Is COC complete and correct? ☐ Yes

3. Is radiation count <100 CPM? ☐ Yes

8. Were samples received intact? ☐ Yes

4. Is a Cooler Present? ☐ Yes
Temp: 0.1 Iced with: Ice

9. Were labs informed about short holds & rushes? Yes / No / NA

5. Was COC signed and dated by client? ☐ Yes

10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
ESS Sample IDs: _____
Analysis: _____
TAT: _____

12. Were VOAs received? Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
a. If metals preserved upon receipt: Date: _____
b. Low Level VOA vials frozen: Date: _____

Time: _____ By: _____
Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
a. Was there a need to contact the client? Yes / No
Who was contacted? _____ Date: _____

Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	222852	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
02	222851	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	222850	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
04	222849	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
05	222848	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
06	222847	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
07	222846	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
07	222853	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
07	222854	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
08	222845	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 4/27/18 1639
Reviewed By: [Signature] Date & Time: 4/27/18 1750
Delivered By: [Signature] Date & Time: 4/27/18 1752

CHAIN OF CUSTODY

185 Frances Avenue Cranston, RI 02910-

www.esslaboratory.com

(860) 286-8900

REASONABLE CONFIDENCE PROTOCOLS REQUIRED

7-Ascorbic Acid, 8-ZnAc 9-

Container Type: P-Poly G-Glass/AG-Amber Glass S-Sterile V-VOA

WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter



GZA GeoEnvironmental, Inc.